THE COMMONWEALTH BUREAU OF PLANT BREEDING AND GENETICS.

School of Agriculture, Cambridge, England.

Consultant Director:

PROF. SIR JOSEPH B. HUTCHINSON, C.M.G., SC.D., F.R.S., Drapers' Professor of Agriculture.

Director: P. S. HUDSON, O.B.E., Ph.D.

Assistant Director: R. H. RICHENS, M.A.

Assistants: Miss T. ASHTON, M.A.
B. E. HEISELER.
Miss O. HOLBEK, B.Sc.
Mrs. M. E. STARK, B.A.

Publications:

PLANT BREEDING ABSTRACTS

Issued quarterly. One volume (4 numbers and annual indexes) per calendar year.

Annual Subscription 70/–. Subscribers (other than trade) resident in the British Commonwealth of Nations, and the Republics of the Sudan and Ireland are allowed a special discount of 20% on annual subscriptions sent direct to the Commonwealth Agricultural Bureaux at the address given below.

Important Note.—Every effort is made to make Plant Breeding Abstracts as complete as possible and its notices of papers referring to plant breeding or the genetics of crop plants as prompt as possible. To aid in this, authors are invited to send to the Director copies of their papers immediately on publication.

OTHER PUBLICATIONS OF THE COMMOWEALTH BUREAU OF PLANT BREEDING AND GENETICS

TECHNICAL COMMUNICATIONS	s.	d.
Joint Publication No. 3. The Breeding of Herbage Plants in Scandinavia and Finland	4	0
Joint Publication No. 5. The Production of Seed of Root Crops and Vegetables	5	0
Joint Publication No. 8. Forest Tree Breeding and Genetics, by R. H. Richens	5	0
4. An Outline of Cytological Technique for Plant Breeders	5	0
6. The Action and Use of Colchicine in the Production of Polyploid Plants, by J. L. Fyfe	3	0
9. Potato Collecting Expeditions in Mexico and South America. II. Systematic Classification of the Collections, by J. G. Hawkes	7	6
11. Cultivation and Breeding of Russian Rubber-bearing Plants	2	6
12. The New Genetics in the Soviet Union, by P. S. Hudson and R. H. Richens	6	0
13. The Use of Heterosis in the Production of Agricultural and Horticultural Crops, by Miss T. Ashton	3	0
14. Technique of Breeding for Drought Resistance in Crops, by Miss T. Ashton	2	6
15. Field Trials II: The Analysis of Covariance, by J. Wishart	3	6
16. The Theory and Practice of the Backcross Method in Breeding of Non-Cereal Crops, by Mrs. M. Thomas	15	0
17. Abstract Bibliography of Cotton Breeding and Genetics, 1900–1950, by R. L. Knight	21	0
18. Principles and Practice of Field Experiments, by J. Wishart and H. G. Sanders. 2nd Edition	21	0
New and Promising Varieties recently described in the Literature:—		
Issue No. 7	2	6
Issue No. 8	6	0

Orders should be addressed to:—

COMMONWEALTH AGRICULTURAL BUREAUX, Central Sales, Farnham Royal, Bucks, England.

Loss in Transit.—Claims for numbers of Plant Breeding Abstracts lost in transit will only be considered if notice of such loss is received within three months of the date of posting.

COMMONWEALTH AGRICULTURAL BUREAUX

JOURNALS PREPARED BY BUREAUX ON RELATED SUBJECTS

	Prepared by the
Herbage Abstracts (50/-)	Commonwealth Bureau of Pastures and Field Crops, Hurley.
Field Crop Abstracts (50/-)	Commonwealth Bureau of Pastures and Field Crops, Hurley.
Horticultural Abstracts (70/-)	Commonwealth Bureau of Horticulture and Plantation Crops, East Malling.
Soils and Fertilizers (60/-)	Commonwealth Bureau of Soils, Harpenden.
Forestry Abstracts (70/-)	Commonwealth Forestry Bureau, Oxford.

The annual subscription to the above journals is indicated in brackets. Subscribers (other than trade) resident in the British Commonwealth of Nations, and the Republics of the Sudan and Ireland are allowed a special discount of 20% on annual subscriptions sent direct to the Commonwealth Agricultural Bureaux at the address given below.

RECENT AND FORTHCOMING OCCASIONAL PUBLICATIONS ON AGRICULTURE AND FORESTRY

TECHNICAL COMMUNICATIONS, ETC.

Commonwealth Bureau of Pastures and Field Crops, Hurley.

41.	Management and Conservation of Vegetation in Africa. 1951	10s. 6d.
42.	Methods of surveying and measuring vegetation. By Miss D. Brown ..	35s. 0d.
43.	The storage of seeds for maintenance of viability. By Dr. E. B. Owen. 1956	20s. 0d.
44.	The underground organs of herbage grasses. By A. Troughton. 1957	25s. 0d.

Commonwealth Bureau of Horticulture and Plantation Crops, East Malling.

22.	Sand and water culture methods used in the study of plant nutrition. By E. J. Hewitt. 1952	42s. 0d.
23.	Field experimentation with fruit trees and other perennial plants. By S. C. Pearce. 1953	10s. 0d.
24.	The mulching of vegetables. By Patricia Rowe-Dutton. 1957	20s. 0d.

Commonwealth Bureau of Soils.

47.	Laterite and lateritic soils. By J. A. Prescott and R. L. Pendleton. 1952	6s. 0d.
48.	The trace-element content of soils. By D. J. Swaine. 1955	25s. 0d.
49.	Mulching. By G. V. Jacks, W. D. Brind and R. Smith. 1955	15s. 0d.

The above publications are obtainable from Commonwealth Agricultural Bureaux, Central Sales Branch, Farnham House, Farnham Royal, Nr. Slough, Bucks, England.

Commonwealth Mycological Institute, Kew, Surrey.

An introduction to the taxonomy and nomenclature of fungi. By G. R. Bisby. 1953	10s. 0d.
Tobacco diseases, with special reference to Africa. By J. C. F. Hopkins 1956	35s. 0d.
Common names of virus diseases used in the Review of Applied Mycology (1957)	6s. 0d.

PRINTED BY W. HEFFER & SONS LTD., CAMBRIDGE, ENGLAND

Plant Breeding Abstracts

Prepared by the Commonwealth Bureau of Plant Breeding
and Genetics, School of Agriculture
Cambridge

Author and Subject Indexes to
Volume XXVIII
1958

Commonwealth Agricultural Bureaux, England
1959

CONTENTS

AUTHOR INDEX - - - - - - - - - 891

SUBJECT INDEX - - - - - - - - - 913

© *Commonwealth Agricultural Bureaux*, 1959

The Executive Council of the Commonwealth Agricultural Bureaux is a signatory to the Fair Copying Declaration, details of which can be obtained from the Royal Society, Burlington House, London, W.1.

AUTHOR INDEX

to Plant Breeding Abstracts, Volume XXVIII

Aalders, L. E., 4830
Aastveit, K., 323, 349
Abbatt, J. D., 1068
Abbott, D. L., 2070
Abbott, E. V., 772
Abdul Hafiz, 1547
Abdullaev, A. A., 2128
Abdul Samad, A., 2651, 2656
Abdurahmanov, S. G., 2114
Abe, S., 2160
Abe, Y., 3879–80
Åberg, E., 1660
Abo-el-Dahab, *see* Abu al Dahab
Abraham, A., 3712
Abramov, N. A., 2106
Abrams, R., 1301, 2877, 4678
Abu al Dahab, M. K., 2984
Acero, J. Arango, *see* Arango Acero, J.
Acosta, A., 2811
Acosta, J. C., 4803
Adachi, S., 1750–1
Adachi, T., 1699–704
Adair, C. R., 3017, 4237
Adams, J. D., 1665, 2969
Adams, M. W., 3056
Adati, *see* Adachi
Afrikjan, B. L., 940
Afzal, M., 731
Agarwal, K. N., 4426
Ahmadeev, G. H., 1051
Ahuja, Y. R., 838
'Aid, S., 4796
Aida, H., 3531
Ajaib Singh Aujla, 1869, 4436
Ajzenštat, Ja. S., 92
Akabori, A., 3589
Akaki, H., 2972, 4221
Akeley, R. V., 633–7, 652–4, 672
Åkerberg, E., 1267, 2642, 4123
Åkesson, H., 2361
Akiba, T., 2487
Albrechtsen, R. S., 2975
Alderman, W. H., 2087
Aldrovandi, A., 1954
Alejandro, N. G., 2285
Aleksandrov, A., *see* Aleksandrov, A. S.
Aleksandrov, A. S., 714, 3212, 4450
Aleksandrov, S. V., 4779
Aleksandrova, L. N., 3854
Aleksanjan, Š. V., 3068
Alexander, D. E., 2925
Alexander, L. J., 178, 1423, 4843
Alfert, M., 1074
Alfieri, S. A., 659
Alghisi, P., 4085
Al Hilali, 'A, 2984
Alihanjan, S. I., 1128, 2405, 3693, 3705, 4911
Alikhanian, *see* Alihanjan
Alim, A., 1713, 2996, 3002
Al-Jibouri, H. A., 4425
Al Khishin, 'A. 'A., 2903
Allan, W., 128
Allard, R. W., 188
Allen, P. H., 1081
Allen, T. C. (Jun.), 503
Allen, S. L., 18
Alleweldt, G., 2244, 4711, 4717
Alley, C. J., 2238
Allfrey, V., *see* Allfrey, V. G.
Allfrey, V. G., 64, 1074, 1188
Allison, J. L., 3037
Allison, P., 1424
Al Mallah, G. S., 2585
Almeida, J. L. F. de, 2226, 3102
Almeida, J. M. de, 4309
Alpat'ev, A. V., 1015, 2359, 3490, 3506
Al'smik, P. I., 1808
Altenburg, E., 1073, 2415
Alvarez L., E., 1019
Alvarez, R. García, *see* García Alvarez, R.
Amano, S., 3753
Amano, Y., 3874
Amenhof, S. Z., 2556
Amerine, M. A., 4715
Amos, A. J., 1092
Ananjan, A. A., 2352
Anant Rao, N. K., 317
Anders, F., 2242
Andersen, T., 2880
Anderson, E., 192
Anderson, E. G., 185
Anderson, J. A., 4008, 4205
Anderson, T., 2532
Andersson, E., 2267
Andeweg, J. M., 1031, 2385, 4860
Ando, M., 1903
Ando, S., 3547
Andonov, I., 3243
Andrew, R. H., 1321
Andrews, J. E., 3938
Andronicescu, D., 2362
Andrukovič, V. I., 1778
Angladette, A., 519, 4269
Angulo Carpio, M. D., 2053, 3740
Aniţia, N., 4534
Annappan, R. S., 2658
Ansari, M. A. A., 713, 4444
Ansari, S. A., 3209
Antarov, B., 1747
Anthony, K. R. M., 3181
Antila, S., 1815
Antipovič, D., 2017
Antropova, V. F., 371, 376, 1606
Antunes Filho, H., 802
Aoba, T., 2160
Appaiyan, M. C., 2657
Appa Rao, P., 1887
Apple, J. L., 3261–2
Appleyard, R. K., 1148, 3654
Aquilizan, F. A., 384
Arakatsu, Y., 1058
Arango Acero, J., 815
Arango A., R., 2861
Arangüena, J. Herrera, *see* Herrera Arangüena, J.
Ardašev, M., *see* Ardašev, M. I.
Ardašev, M. I., 325, 504
Argikar, G. P., 856, 2989, 3303, 3532, 3535
Armoni, S., 4857
Arnason, J. T., *see* Arnason, T. J.
Arnason, T. J., 3615, 3626
Arnaudov, N., 1508
Árni Jónsson, 3860
Arnold, H., 3721
Arnold, M. H., 3173
Arnoljd, G., *see* Arnold, H.
Arnott, R. A., 418
Arnould, R., 2729
Arnoux, L., 4263
Arny, D. C., 501
Arriaga, H. O., 379
Ar-Rushdi, A. H., 1990
Artem'ev, G. V., 1025
Artomasov, V., 4328
Artschwager, E., 3238
Arun Kumar Sharma, *see* Sharma, A. K.
Asana, R. D., 3925
Ashida, J., 1058–60, 2488
Ashour, W. E., *see* 'Ashur, W. 'A.
Ashraf, M., 3534
Ashri, A., 1302, 4574
'Ashur, W. 'A., 3454
Ashworth, L. J. (Jun.), 1435
Aslam, C. M., 4102–3
Aslam, M., *see* Aslam, C. M.
Asthana, R. P., 3299
Astrachan, L., 1074
Astrálaga, R. R., 436
Atabekova, A. I., 1782, 3108, 4355
Atkins, I. M., 149, 310, 1337–8, 2795 3218
Atkins, J. G., 533, 3017
Atkins, R. E., 1667
Atkinson, G. F., 2990
Aufhammer, G., 1226
Aujla, Ajaib Singh, *see* Ajaib Singh Aujla
Auriau, P., 1475
Ausemus, E. R., 2809, 2820, 2825–6, 4102
Ausemus, R. R., *see* Ausemus, E. R.
Avakjan, A. A., 304, 4804
Avanzi, S., 2765, 3466
Avent, K. L., 881
Avery, A. G., 3822
Avramescu, A., 2362
Avtar Singh, 3196
Avtonomov, A. I., 1880
Aycock, R., 992
Ayers, G. W., 3468
Ayyangar, G. Seshadri, *see* Seshadri Ayyangar, G.
Aziz, M. A., 3005

Babb, M. F., 676
Badruddoza, K. M., 771
Badoux, S., 1729
Baenziger, H., 137, 615, 4352

Bagge, H., 4466
Baggett, J. R., 1035, 3511
Bagnall, R. H., 4418
Bahareva, S. N., 678
Bahn, A. N., 339
Bahtadze, K. E., 801, 4545
Bahteev, F. H., 1659
Bailey, P. C., 3755–6
Bainbridge, J. R., 1108
Bair, W. J., 3637
Baker, E. P., 1678
Baker, G. A., 3612
Baker, R. E. D., 818
Bakerspigel, A., 1189
Bakhteyev, F. Kh., *see* Bahteev, F. H.
Bal, A. K., 3360
Balachandran, M., 719, 3192
Balašov, T. N., 988
Baldacci, E., 3013
Baldini, E., 907, 2178
Balinsky, B. I., 3741
Ballard, F., 1727
Ballatore, G. P., 4312
Baltensperger, A. A., 1303
Banasik, O. J., 1669
Banerjee, S. N., 521, 4251
Banerji, I., 909
Banga, O., 2311, 4794
Banneick, A., 2898
Baptista, A., 2220
Baptista, J. G., 4064
Baranova, A. P., 2137
Barbacki, S., 3819
Barbaryč, A. I., 3567
Bărbat, I., 4223
Barbour, E., 2534
Barclay, P. C., 4360
Barducci, T. Boza, *see* Boza Barducci, T.
Bareš, I., 4059
Barham, W. S., 1027
Barksdale, W. L., 43
Barlow, B. A., 4753
Barlow, J. L., 2530
Barmore, M. A., 307–9
Barner, H., 3418
Bärner, J., 4941–2
Barrau, J., 786, 897, 1366
Barber, H. N., 959, 1047, 4791
Barbier, R., 2202
Barreto Domínguez, R., 4488
Barrett, H. C., 3392
Barrie, A. G., 3516
Bartels, F., 34
Barthelmess, A., 85
Bartley, B. G. D., 2011, 4546
Barua, P. K., 4541
Basak, S. L., 4479
Basile, R., 333, 338, 2838, 2863, 2865, 4091–2
Bass, E. J., 495
Basse, N., 953, 4730
Bastos Lagos, M., 2812, 2841
Batcher, O. M., 526, 1041
Bates, R. P., 3042
Battaglia, E., 3467
Battistelli, E., 111
Batts, C. C. V., 4084, 4089
Batulja, E. E., 1537
Batygina, T. B., 1007, 1010
Bätz, G., 2718
Bauckmann, M., 2118
Bauer, R., 112, 922
Bauman, N., 54
Baumann, H., 238
Baxter, S. C., 3034
Baylor, M. B., 18
Bayraktar, A. K., 4848
Beachell, H. M., 525, 533
Beadle, G. W., 1074, 2449, 2462
Bear, R. P., 4155
Beard, B. H., 1304, 1307
Beard, F. H., 822, 824–6, 831
Beatty, A. V., 2464, 2588
Beatty, J. W., 2588
Becerra Z., C., 813
Bečjus, K., 1824
Beck, S. D., 1645–6
Bederker, V. K., 1852, 1886
Bedi, K. S., 1554
Beetle, A. A., 4291
Behrens, W. U., 4, 2444
Beingessner, H. F., 2099
Beiser, S. M., 1156
Belaja, O. P., 3068
Belderok, B., 1451
Belik, V. F., 994
Beljaeva, Z. S., 559
Bell, G. D. H., 240, 810, 1530, 1673, 3800
Bellingham, R. C., 1425
Belohonov, I. V., 2193
Bemelmans, J., 752
Bemis, W. P., 1036
Bendelow, V. M., 472, 495
Bender, L., 2557
Bendich, A., 1074
Benedek, L., 4558
Bennett, J. H., 1144–5
Benoit, R., 791
Benzer, S., 1074, 2505, 3708
Benzoni, F., 4784
Berčenko, B. Ė., 3979
Berchoux, C. de, 3373
Bereznjakovskaja, A., 3021
Berg, R. L., 3779
Bergann F., 2124
Berger, C. A., 1211
Bergerson, F. J., 608
Bergström, C., 2643
Beridze, G., I., 3402
Bernal, J. D., 1184
Bernard, R. L., 1043, 4880
Bernardo, F. A., 1902
Bernstein, H. L., 2589
Berrie, A. M. M., 2437
Bertani, E. T., 18
Best, R. J., 1028
Bettner, R. E., 4205
Betzema, J., 2324
Beuzenberg, E. J., 4736
Bever, W. M., 342
Beysel, D., 777
Bhaduri, P. N., 293–4
Bhaskaran, S., 3533
Bhat, N. R., 3200, 4440
Bhatnagar, M. P., 2926
Bhattacharyya, B., 978
Bhattacharyya, N. K., 3770–1
Bhattacharyya, U. C., 3750
Bhatti, A. G., 3067
Bhatty, F. A., 3209
Bianchedi, A., 4657
Bianchi, A., 383, 442, 1370
Bianchi, H., 1905
Bienz, D. R., 3141
Bieri, R., 2750
Bilquez, A. F., 2525
Bingefors, S., 4336
Bingham, J., 1530
Binkley, A. M., 640
Binnington, J. P., 4930
Bird, L. H., 1531
Birkett, L. S., 1923
Bishop, C. J., 2703, 3943
Biskupski, A., 1605
Bisson, J., 3396
Biswas, T. D., 298
Bjaanes, M., 2721
Björling, K., 4519
Black, W., 3155
Blackburn, K. B., 1206
Blackhurst, H. T., 165
Blaha, J., 931
Blair, D. S., 2099
Blakeslee, A. F., 3822
Blanche, D., 1924
Blanco González, J. L., 461
Blanco González, M., 461
Blasse, W., 2144
Blaževskij, E. V., 387
Bleasdale, J. K. A., 2440
Blixt, S., 4893, 4895
Block, P., 1034
Boasso, C., 1566
Bobadilla, G. F. de, *see* Fernández de Bobadilla, G.
Bocanegra S., S., 435, 2369, 2910
Böcher, T. W., 3073
Bock, H., 3812
Bockstahler, H. W., 4518
Bócsa, E., 4090
Bócsa, I., 3219
Boczkowska, M., 4785
Boev, N. D., 855, 3284
Bogoljubova, O., 2131
Bogyo, T. P., 401, 410
Böhm, G., 2110
Böhme, H., 1013
Bohmont, B. L., 3071
Bohn, G. W., 987
Böing, J., 4912
Bojňanský, V., 2895
Boldea, E., 287–8, 1529, 4019
Boldja, *see* Boldea
Bolland, G., 2245
Bollich, C. N., 3000
Bolonjanov, A., 874
Bolonkina, K., 4892
Bolotskij, Ju. S., 4640
Bolotina, R. I., 2189
Bolsunov, I., 4535
Bolton, A. T., 1426
Bolton, J. L., 553, 3023, 3936, 4322
Bonciarelli, F., 1983
Bondarenko, G. K., 1487
Bonde, R., 635–6, 652–4
Bondoux, P., 2166–7
Bonfiglioli, O., 1572
Bonnemaison, L., 3293
Bonner, D. M., 1074
Bonnet, P., 852
Bonnier, G., 2414
Bono, M., 2987
Bonvicini, M., 4296
Booher, Z. K., 3670
Boone, D. M., 197, 878, 3337–8, 4624
Boos, G. V., 1000
Bora, K. C., 87
Bordeianu, T., 2082
Bordejanu, *see* Bordeianu
Bordignon, S., 4703
Borek, E., 3674
Borkovskaja, V. A., 1590, 1762, 4000

Borlaug, N. E., 2791, 2814, 2829, 2859
Borsa, P., 4111
Bose, B. C., 3533
Bose, S., 1601
Bose, S. R., 1066
Bosemark, N. O., 566, 582
Bottazzi, G., *see* Bottazzi, G. B.
Bottazzi, G. B., 2945, 4311
Boubals, D., 3411
Bourne, G. H., 1076, 4934
Bouvarel, P., 3416, 4726
Bouychou, J.-G., 2057
Bowden, W. M., 2964, 3074, 3616
Bowen, H. J. M., 204
Boyce, W. R., 3225
Boyes, J. W., 3617, 3634
Boza Barducci, T., 733, 3960, 4452
Božinov, M., 734
Braak, J. P., 2319
Brachet, J., 4933
Bradley, R. A., 1111
Bradley, R. H. E., 4418
Bradshaw, A. D., 3967
Braendle, D. H., 1197
Bragdø, M., 618
Branas, J., 3397
Brandes, E. W., 3238
Brandon, J. F., 1352
Brandolini, A., 2918, 2946
Brandt, K., 3415
Braudeau, J., 4549
Braun, H., 3336
Bravenboer, L., 2358
Braverman, S. W., 3504
Brawn, R. I., 445, 3940
Brazzigher, G., 898
Breglia, G., 2103
Breider, H., 1232, 3395
Breitenfeld, C., 1675
Brej, S., 1528
Brenner, S., 1195
Breslavec, L. P., 2562
Bressani, R., 4189
Brett, P. G. C., 753, 1913
Brewbaker, J. L., 1305, 1371, 2527
Brežnev, D. D., 1018, 1023, 4775
Brian, P. W., 3991
Bridgmon, G. H., 1427
Briggle, L. W., 1632, 2824, 4023
Brigham, R. D., 3090
Brightwell, W. T., 160
Brim, C. A., 3522
Bringhurst, R. S., 3384–5
Brink, R. A., 1372, 1614, 4150–2
Brinkman, K. A., 3424
Britton, D. M., 4682–3
Broekhuizen, J. T. M., 4745
Broekhuizen - van Straaten, L. E., 4737
Broekmans, A. F. M., 858, 862, 2042
Broertjes, C., 3976
Bromfield, K. R., 4105–6
Brooks, J. S., 2932
Brooks, M. H., 3044
Brooks, R. M., 3318–9
Brouwer, W., 3805
Brown, A. M., 2831, 2847
Brown, C. M., 224, 356, 4122
Brown, C. H., 3198
Brown, F. B., 4256
Brown, G. B., 1074
Brown, H. B., 2430
Brown, K. J., 3172
Brown, M. S., 1373, 1866, 4453
Brown, W. J., 3057
Brown, W. V., 588, 1732, 1737–8, 4277–8
Browning, B. L., 4738
Browning, D. R., 4880
Broyles, J. W., 247
Brücher, H., 3150
Bruehl, G. W., 1445, 1571
Brugovitzky, E., 4610
Brun, J., 3776
Bruner, G. H., 311
Bruyère, R., 2725
Brykczynski, J., 1977
Bryssine, P., 3841, 4878, 4900
Bubar, J. S., 135, 3115, 3635
Buck, C. E., 3551
Buck, R. W. (Jun.), 637–8
Buckner, R. C., 1433
Bucur, I., 4553
Buda, L., 4333
Budagovskij, V. I., 879
Budd, A. C., 1080
Buddenhagen, I. W., 1428, 4650
Budjuk, V. P., 2631
Bugarevič, G. B., 3490
Buhr, H., 4945
Bukasov, S. M., 2633, 4417
Bulger, R. O., 2849
Bullen, E. R., 1533
Buller, R. E., 1763–4, 3080
Bullman, O., 2871
Bunescu, D., 2326, 2362
Bunting, A. H., 4666
Bunting, E. S., 4568
Burdick, A. B., 1306, 2503, 2702
Burdick, A. D., *see* Burdick, A. B.
Burga, R. del Carpio, *see* del Carpio Burga, R.
Burgess, A. H., 830
Burgi, E., 143, 3949
Burk, L. G., 796
Burkhart, B. A., 473
Burmistrov, A. D., 2194
Burnham, C. R., 2495, 2815
Burns, R. E., 3043
Burov, I. I., 4530
Burrous, J. W., *see* Burrows, J. W.
Burrows, J. W., 1133, 3669
Burton, G. W., 545, 1314, 1362, 3031, 4228
Busch, G., 3224
Busch, L. V., 1001
Bushnell, J., 180
Butany, W. T., 2998
Butkova, V., 712
Butler, J. A. V., 1074, 3825, 4927
Butler, L., 4838
Buxton, E. W., 215, 1050, 4896
Buzanov, I. F., 781, 4500
Buzulin, G. S., 4603
Byrd, W. P., 4134
Byrde, R. J. W., 2115

Cabanillas, E., 2370
Cabera I., M., 2803
Cadiz, T. G., 4803
Cadman, C. H., 3379
Caldecott, R. S., 1304, 1307, 1327, 2695
Caldwell, A. C., 462
Caldwell, R. M., 345, 1441, 1446, 1560, 1568, 2785, 2793, 2832, 2834, 4082
Calef, E., 25
Callaghan, F. R., 4275
Calpouzos, L., 2370
Calzada Benza, J., 1116
Câmara, A., 2448
Cameron, C., 1923
Cameron, D., 3790
Cameron, D. R., 1988, 1999
Cameron, J. W., 3538, 4656
Cammack, R. H., 2955
Campbell, A. B., 2797, 2822
Campbell, A. I., 223
Campbell, J. A., 3505
Campbell, R. W., 3409
Campbell, W., 985
Camper, H. M., 709
Campos, A., 2829
Camus, A., 576
Canode, C. L., 597
Čanov, T. V., 4050
Capinpin, J. M., 2009
Capot, J., 3008
Capucci, C., 2127, 2239
Caputa, J., 551, 1729
Car, N., 3035
Carilli, A., 4914
Carlone, R., 2086, 2112, 2123
Carnahan, H. L., 578
Carpenter, J. A., 4346
Carpenter, K., 221
Cărpinişan, T., 1871, 1888
Carr, A. J. H., 3758
Carramiñana, A. Casas, *see* Casas Carramiñana, A.
Carrington, P. L., 3229
Carson, G. P., 4001
Carter, G. H., 2152
Cartwright, W. B., 345
Carvalho, A., 802
Casas Carramiñana, A., 3363
Case, M. E., 1374, 3652
Cash, E. K., 2275
Caspar, A., *see* Caspar, A. L.
Caspar, A. L., 1345, 1375, 1398
Cassalett D., C., 436
Castaldi, M. L., 4068
Castilla Chacón, F., 2852
Castillo Z., J., 2007
Catalano, M., 2413
Catcheside, D. G., 2408, 3675
Catherinet, M., 3371–2
Cave, C. T., 3182
Čebolda, V. F., 1970
Cebotaru, V., 4214
Cech, F., 4766
Cehanovskaja, N. A., 1677
Celarier, R. P., 585, 3044, 3064–5, 3772, 4293–5
Celestre, M.-R., 2584
Cenóz, H. P., 1565, 1595, 2806, 2842
Čenykaeva, E. A., 694, 3856
Čereeva, S. N., 982
Čerevatenko, A. S., 4646
Černenko, S. F., 2100, 4603
Černojarov, M. V., 2151
Cervantes, J., 655, 4196
Červenka, V. J. B., 3101
Česnokov, P. G., 213, 1644
Četverikova, E. P., 2089
Cevallos, J. Urbina, *see* Urbina Cevallos, J.
Chakrabarti, N. K., 3014
Chambers, J. B., 4677
Chamura, S., 3543–4, 4910
Chance, H. L., 82
Chandler, A. C. (Jun.), 79
Chandramathi, P. S., 3191
Chandrasekharan, P., 2659, 4249
Chang, F., 4304

Chang, L. O., 4838
Chang, L.-P., 4225
Chang, S.-M., 3389
Chao, C. Y., 4153
Chao, D. B., *see* Chao, T.-P.
Chao, T.-F., 1515
Chao, T.-P., 2113
Chao, Y.-S., 4856
Chapas, L. C., 2044
Chapman, V., 280
Chapman, W. H., 1348, 1591
Chapot, H., 99
Chargaff, E., 1074, 1136
Charles, D. R., 3659
Charles, V. R., 1041
Chatterjee, P., 4867
Chattopadhyay, S. B., 3014
Chaudhari, B. B., 2393, 3286, 3532
Chaudhuri, S. D., 746
Chaudhary, *see* Chaudhari
Chaudhry, A. R., 1547
Chavan, V. M., 972, 1029, 2688, 2989, 3286, 3305, 3908
Chavanne, R., 3242
Chawkat, J., 4527
Chayen, J., 3748
Chen, C.-Y., 4159
Chen, T., 3167
Cheng, C.-C., 4478
Cheng, C.-F., 1277, 2496
Cheng, C.-K., 4159
Cheng, K. C., 1191
Cherubini, C., 4712
Chiang, J.-J., 2741
Chiarugi, A., 2765, 3312, 3849, 4474
Chiba, O., 957
Chiba, S., 961
Chien, N.-F., 1872
Chien, T.-H., 1410, 2692
Childs, A. H. B., 3247
Chinloy, T., 1910
Chinoy, J. J., 248–9, 1526, 3980
Chiriboga, J., 730
Chishiki, T., 4423
Chiu, J.-C., 2156
Chládek, M., 3541
Cho, Y.-S., 2741
Chona, B. L., 3915
Chou, Y.-S., 4060
Christensen, J. J., 1424
Christiansen, H., 3418
Christidès, *see* Khristides
Chu, K.-H., 4042, 4304
Chu, T. L., 1914
Chung, C.-K., 1723
Church, G. L., 4302
Ciaravellini, L., 906
Cicin, N. V., 1176, 1408, 3664, 3966
Ciegler, A., 2406
Ciferri, F., 4552
Ciferri, R., 4552
Čihladze, L. S., 4749
Čikov, D., 3134, 4011, 4494
Činoj, D. D., *see* Chinoy, J. J.
Ciobanu, A., 4714
Ciribì, A., 3401
Čižov, S. T., 3346
Clark, E. M., 385
Clark, G. H., 257
Clark, J. B., 60, 80
Clark, K. W., 1356
Clark, R. V., 1679
Clausen, J., 142, 3788, 3948
Clausen, K., 4735
Clausen, R. E., 1999
Clavier, C., 100, 4565
Clayton, E. E., 170, 1350
Clements, T. E., 1623
Cleveland, R. W., 4281
Clifton, C. E., 1085
Clowes, R. C., 2549–50
Cochran, W. G., 1067
Cociu, V., 2082, 2146
Cockerham, C. C., 187
Cocks, B., 4282
Coe, E. M. (Jun.), 2911
Coenradie, J., 476, 4220
Coey, W. E., 106
Coffman, F. A., 359–60, 1308
Cohen, A., 890
Cohen, S. S., 1074
Cohn, N. S., 1376
Colbry, V. L., 3072
Cole, C. S., 1831
Cole, K., 3633
Coleman, O. H., 159, 1309, 4495
Collado Montes, M., 870
Collins, F. I., 2377
Collister, E. H., 4567
Comar, C. L., 1070
Compton, L. E., 241, 345, 1560, 4082
Comstock, R. E., 1328, 2497, 2912, 3687, 4447
Comstock, V. E., 3298
Compton, L. E., 2785, 2793, 2832, 2834
Comuzzi, A., 2230, 4696
Conger, A. D., 3974
Connin, R. V., 4354
Connor, H. E., 568
Conroy, R. J., 989
Constantinescu, G., 941, 2234
Converse, C. D., 406
Coons, G. H., 4518
Cooper, D. C., 671, 4385–6, 4393
Cooper, J. P., 1355, 1471, 3052, 4283
Cooper, W. C., 2180, 4679–80
Cooper, W. E., 1310
Cooperrider, M., 3419
Cope, F. W., 1118, 2011, 3274
Cope, W. A., 1768, 3035, 3105
Copeman, G. J. F., 4285, 3057
Copp, L. G. L., 260, 4026
Corbetta, G., 3013
Cordner, H. B., 4871
Corey, R. R., 2368
Corkill, L., 544, 1726
Cormack, D. V., 3626
Cornuet, P., 2202
Corrales M., A., 3282
Correa, R. T., 4872
Corriols, M., 560
Cortázar, R., 2799
Cosmo, I., 933, 2219, 2225, 2230–1, 3401, 3407, 4696, 4700–2
Costa-Rodrigues, L., 1633
Coste, R., 811, 2005
Cothran, F. V., 1155
Cotter, R. U., 336, 2836
Cottier, K., 1470
Cottone, S., 3768
Coutinho, M. P., 2226
Covas, G., 2768
Covey, R. P., 466
Cowan, J. R., 1316, 1336, 4290
Cowan, S. T., 3571
Cowley, W. R., 4906
Cox, G. M., 1067
Cox, J. E., 3376
Cox, R. S., 2398
Craig, D. L., 86
Craigmiles, J. P., 154, 2893
Cralley, E. M., 4237
Cram, W. H., 3439, 4734
Crane, L. E., 533
Crane, P. L., 1353
Crang, A., 2072–3
Craveri, R., 81
Crawford, J. H., 845
Crescimanno, F. G., 4630–1
Crescini, F., 2542, 4254, 4474
Crick, F. H. C., 66, 1074
Cripps, E. G., 822
Crişan, L., 4714
Critchfield, W. B., 2287
Crnko, J., 3476
Crosby, A. R., 2763
Cross, W. E., 2424
Crossan, D. F., 3283
Crossa-Raynoud, P., 3328
Crowder, L. V., 154
Crowe, K., 3642
Crowley, A. J. (Jun.), 4169
Croy, L. I., 486, 2728
Cruickshank, I. A. M., 1049
Cruz, S. Esquivel, *see* Esquivel Cruz, S.
Csák, Z., 2618
Csapody, Gy. (Mrs.), 4367
Cuany, R. L., 1377, 3696
Cuende, F. J., 2208
Culbertson, J. O., 2039, 3298
Cumming, W. A., 4616
Cummins, C. S., 43
Cunin, G., 306
Curiel, F., 2814
Curme, J. H., 448
Currance, T. M., 2706
Curtis, B. C., 486, 2778
Curtis, H. J., 1327, 2694
Curtiss, R., 1389
Cuzin, J., 787
Cvasnîi, D., 2135
Cvetov, V., 1173
Cymbal, M. M., 500
Czabajska, W., 2020
Czaja, A. T., 1901
Czeika, G., 686, 3806
Czjan, Ju.-Ju., *see* Chiang, J.-J.
Čžo, Ju.-Š., *see* Cho, Y.-S.

Dadabaev, A., 4460
Daday, H., 3088, 4341
Dahms, R. G., 367
Dahnovič, T., 732
Dale, W. T., 805
Dalmasso, G., 2209
D'Amato, F., 2600, 3311–2, 3826, 4570
Dammers, J., 1453
d'Angremond, A., 869
Danielli, J. F., 1076, 4934–5
Daniel, L., 2623
Danilov, A. D., 4644
Dansereau, P., 2419
Dantuma, G., 1450
Dark, S. O. S., 3177
Darling, H. S., 823
Darlington, C. D., 3562
Darmer, G., 3413
Darpoux, H., 2166–7
Darrow, G. M., 919, 924, 4694
Darshana Nand, 2161
Darwin, C., 4931
Das, K., 2970, 2973
Das, M. N., 1105–6
Das, N. B., 298, 4859

Das, N. K., 74
Daskalov, H., 1022, 3503
Dastane, N. G., 3239
Datta, P. C., 3548
Datta, R. M., 745, 3221, 4480
David, H. A., 1097
David, P. R., 3560
Davidson, D., 1208, 1210, 3767, 4792
Davidson, L. G., 770
Davies, A. J. S., 621
Davies, D. R., 204
Davies, W. E., 3094–5
Davis, B. D., 54, 1156
Davis, E. L., 3278
Davis, E. W., 3465, 4793
Davis, G. N., 987
Davis, G. W., 647
Davis, R. L., 1354
Davydov, N. N., 116, 285, 327
Dawood, *see* Dawud
Dawson, E. H., 526, 3009
Dawud, M. M., 2585
Day, A. D., 2976, 4024
Day, K. M., 4063
Day, P. R., 1186, 2555
De, D. N., 2596
De, H. N., 3533
Dean, A. C. R., 41
Dean, J. L., 1309
Deanon, J. R. (Jun.), 4183
Dearborn, C. H., 646, 676
Deary, P. A., 526
Debbagh, K. A., 1997
Deborin, G. A., 2566
De Braun, R. M., 2443
de Bruyen, J. W., 2311
D'Cruz, R., 4667, 4903
Děd, J., 1777
Deering, R. A., 3638
Degener, O., 3568
de Giovanni, R., 2556, 3691, 3695
de Groote, R., 88
Degry, H., 984
de Haan, H., 1227, 1271, 1474, 4384
de Hevesy, G. C., 1068
Dejmontovič, B. I., 4529
Delanoue, P., 3359
de la Garza, A., 1098
Delattre, R., 4433
Delbruck, M., 1074
del Carpio Burga, R., 733, 3961, 4452
Del Gaudio, S., 932, 2170, 4663
Delhaye, R. J., 3315
de Leo, T., 4068
Delihas, N., 1327
Deliu, A., 4002
Delone, L. N., 1368
Del Rosario, M. S., 1438
Deltscheff, G., 2052
del Valle, C. G., 3539
Demerec, M., 11, 144, 2450, 3561, 3712, 3951
Demmler, R., 3977
Dentler, J., 2981
Deonier, M. T., 163
de Preter, E., 2173
Derbyshire, D. M., 825
Dermen, H., 880
Dermine, E., 3350
de Robichon-Szulmajster, H., 3552
Desai, K. B., 4429
Desai, M. K., 4461
de Serres, F. J. (Jun.), 1378, 2534
Deshmukh, N. Y., 3294
Deshpande, R. B., 832
de Silva, C. A., 2054
Desneux, R., 3306, 4722
Deufel, J., 2048
DeVay, J. E., 44, 466
Dewey, D. R., 609
Devred, R., 2665
Dewey, W. G., 1550
Dexter, S. T., 1771, 4327
Dhanaraj, L., 4226
Dharampal Singh, 840
Dharmarajulu, K., 728, 1849
Dhawan, N. L., 470
Dick, W. E., 1069, 1224
Dickenson, D. D., 1744
Dickerson, O. J., 1436
Dickson, A. D., 473
Dickson, J. G., 499, 1430, 2844
Didus', V. I., 1495
Dietz, S. M., 1434
Dijksterhuis, H. P., 926, 2187, 3383
Dijkstra, J., 1775
Dilov, H., 3134
Di Martino, V., 1616–7, 4158
Dimas, A., 4803
Dimitrov, P., 3386
Dimmock, F., 432
Dinkel, G. J., 658
Dionigi, A., 2168
Dionne, L. A., 3132
Divakaran, K., 512, 4904
Dixon, C. E., *see* Dixon, G. E.
Dixon, G. E., 233, 2868
Dmitročenko, A. P., 3854
Doby, J., 3497
Dobzhansky, T., 3726
Dodds, K. S., 3795
Doggett, H., 514, 2992
Dogonadze, R. I., 232, 1275–6
Dohi, S., 3753
Dolan, D. D., 2711, 3281
Dolgušin, D. A., 2125, 3850, 3979
Doling, D. A., 696
Dolgov, V. F., 3332
Doll, C. C., 2153
Donath, H., 3146
Donnelly, E. D., 153
Donovan, P. A., 405, 427
Dore, W. G., 3941
Dorst, J. C., 1411, 3865
Dostál, R., 2547
Dostálek, J., 3353
Doty, P., 3668
Doucet, R., 1213
Doudney, C. O., 1169, 1381, 3709
Douglas, H. C., 2409
Dowdles, D., 1046
Downey, R. K., 553, 3026
Dowrick, G. J., 2122, 3697, 3942, 4627
Dowson, V. H. W., 2177
Drăghici, D., 1946
Drain, B. D., 4629
Drobnica, L., 3557
Drolsom, P. N., 170–1, 1311, 1329, 4537
Drozd, A. M., 2360
Duarte, A. J. S., 1714, 4236
Duarte, A. S., *see* Duarte, A. J. S.
Dubinin, N. P., 16, 3666
Dublin, P., 803, 2010
du Bois, A. M., 3461
Dudko, P. N., 2335
Dudley, J. W., 600, 3082, 4510
Dufournet, R., 1791, 4259
Duich, J. M., 1359
Dumon, A. G., 368
Duncan, D. B., 1102
Duncan, W. G., 2948
Dunn, G. M., 579
Durán Grande, M., 3258
Durand, Y., 2987
Durham, N. H., 1157
Durham, V. M., 2767
Durham, L. J., 3947
Durrant, A., 4468
Dutt, N. L., 1093, 3916
Duvick, D. N., 4187
Dwernicki, W., 1670
Dye, M. H., 3358
Dykhuis, F. J., 412
Dykstra, T. P., 644

Eade, A. J., 4207
Earhart, R. W., 4134
Easton, G. D., 4419
Eaton, F. M., 1856
Eaton, M., 3670
Ebeling, W., 911
Eberle, P., 749
Echols, R. M., 4760
Eder, N., 4397
Edgar, J., 256
Edmundson, W. C., 645
Edwards, A. W. F., 2533
Edwardson, J. R., 3112
Effmann, H., 3107
Efimov, M. I., 341, 439
Egorov, V. I., 2195
Egri, L., 1985
Eheart, J. F., 458, 709
Ehrenberg, C., 2290
Ehrenberg, L., 482–3, 1168, 4219, 4895
Ehrendorfer, F., 62
Ehrlich, H. L., 1140
Eichelsbacher, H. M., 930
Eichenmuller, J. J., 4406
Eichhorn, E., 903
Eid, S. E., *see* 'Aid, S.
Eifrig, H., 103
Eigsti, O. J., 2471
Eikeland, H. J., 2879
Einset, J., 2697, 4612
Einspahr, D. W., 4744
Eisenstark, A., 1387
Elagin, M. N., 776
El-Ani, A. S., 4674
El'čaninova, N. N., 4298
Eleckaja, L. E., 1932, 1941, 1962
El-Helaly, A. F., *see* Al Hilali, 'A.
Eliasson, S., 617
Elitropi, C., 1628, 2941
El Khishen, A. A., *see* Khishin, 'A. 'A.
Ellena, G., 4561
Ellenberger, C. E., 2142
Ellenby, C., 4413
Elliott, F. C., 277–8, 1312
Elliott, J. G., 218–9
Ellis, R. T., 399, 407
Ellis, S. K. F., 214
Elmer, O. H., 4422
El Murabaa, A. I. M., 2312, 4782
Emery, W. H. P., 588, 1732, 1737–8, 4277
Emge, R. G., 4105–6
Emilsson, B., 3145
Enčev, Ja., 4006
Endemann, W., 4522
Endo, R. M., 1429, 4122
Endo, T., 3880
Endrizzi, J. E., 1688, 1870
Enescu, S., 288, 4019

Ėnesku, *see* Enescu
Englesberg, E., 1149, 1379
Enikeev, H. K., 2133, 4634
Enken, V. B., 116
Enloe, J. A., 4343
Entwistle, H. M., 4550
Ephrussi, B., 3834
Ephrussi-Taylor, H., 1074, 3668
Epp, J., 2019
Erbe, L., 1785
Erbert, M., 2580
Erina, O. I., 2359, 3490
Ergle, D. R., 173
Erickson, H. T., 649
Erina, O. I., 1015
Erlepesov, M., 453
Ernst, A., 2553
Ernst, W., 4725
Erohina, L. I., 2405
Erwin, D. C., 3538
Esajan, G. S., 3375
Eschena, T., 2870
Eskew, E. B., 4134
Eslick, R. F., 1666
Espino, S., 2859
Esquivel Cruz, S., 814
Essad, S., 1212
Esser, K., 3829
Estrada, J. A., 730
Evans, A. H., 2539
Evans, H. J., 3757, 3762
Evans, W. L., 3761
Evdokimov, M. M., 2300
Everett, H. L., 384
Everson, E. H., 264, 1313
Evreinoff, V.-A., 4648, 4662
Ewing, J. A., 3968

Faber, W., 2871
Fabergé, A. C., 1380, 1609, 2874
Fadeeva, T. S., 23
Fadrhons, J., 377
Fägersten, E. G., 1062
Fajersson, F., 286, 2736, 2755–6
Fallot, J., 4720
Fan, H.-C., 4802
Fang, C.-C., 528
Fang, H.-F., 2411
Fardy, A., 787
Farkas, G., 1569, 4104
Farquharson, L. I., 2934
Farrar, R. F., 821
Fassi, B., 1984
Fastovec, S. N., 3979
Faulkner, R. C., 3171
Favarger, C., 3827–8
Favero, A., 1535, 3995, 4245
Favret, E. A., 1651–2
Feaster, C. V., 1899
Fedorov, A. I., 1931, 1935, 1940, 1967
Fedotova, O. S., 980
Fedulova, A. P., 3472
Feillafe, S. M., 757
Fejer, S. O., 547, 3058
Felecan, V., 4161, 4553
Fel'dberg, K. A., 3410
Fellows, H., 1425
Fenaroli, L., 2914, 4144
Fenn, W. O., 1155
Fenzl, E., 3806
Feodanova, M. D., 318
Ferguson, J. H. A., 2306
Fernandes, S. J. G., 4069
Fernández de Bobadilla, G., 2216, 2232
Fernández Valiela, M. V., 3501
Ferré, Y. de, 95
Ferris, J. M., 703
Fetner, R. H., 2586
Fiedler, H., 685
Fielding, W. L., 429, 4162
Filov, A. I., 2332, 2335, 3484
Finaev, E. P., 2134
Finch, C. G., 4809
Fincham, J. R. S., 9–10, 3694, 3840
Findley, W. R. (Jun.), 468, 2490
Finley, A. M., 1053
Finley, L., 157, 1864
Finney, D. J., 1118, 3728
Finney, K. F., 310, 2779
Fischer, G. W., 1086, 1432
Fischer, H. E., 4358
Fisher, C. D., 895
Fisken, A. G., 3379
Fitschen, J., 3566
Fitzgerald, P. H., 2544
Fitzgerald, P. J., 1568
Flangas, A. L., 1430
Fleckenstein, M., 1101
Fleming, A. A., 156
Fleming, J. W., 164
Flesher, D., 150
Fletcher, J. W., 1780
Floch, H., 2710
Flor, H. H., 1897
Focke, R., 3988
Fogle, H. W., 2152
Fontenot, J. F., 1842
Forbes, I. (Jun.), 1314, 3041, 3112
Force, D. W., 1315, 2781
Forgay, M., 3626
Forro, F. (Jun.), 2575
Forssberg, A. G., 1068
Forsyth, P. R., 2854
Fortanier, E. J., 4669
Fortmann, H. R., 4281
Foury, A., 3053
Fowden, L., 457, 459
Fox, M. S., 32
Fraenkel-Conrat, H., 1074
Frahm-Leliveld, J. A., 3078
Frančuk, E. P., 2094
Frandsen, K. J., 543, 4339
Frankel, O. H., 2712, 3922
Frankes, R. V., 1316
Franzke, C. J., 510, 2990
Fraser, A. S., 2546, 1141–2
Fraser, D., 1135
Fraser, J. G. C., 1504
Frazier, W. A., 3511
Fredericq, P., 33
Freeman, W. E., 819
Freese, E., 1138, 3656, 3708
Freitas, A. P. C. e, 1557, 1563
Fremond, Y., 863
Fretay, E., 759
Frey, E., 2314
Frey, K. J., 350, 357, 1301, 1331, 1667, 2700, 2877
Freytag, H. E., 2144
Fridman, S. E., 775
Friedkin, M., 1074
Friend, J., 969
Friends, F. H. M., 4916
Fries, N., 45
Frimmel, F., 2340
Frimmel, G., 4127, 4396–7
Frith, L. H., 4587–8
Fröier, K., 1672
Fromow, M. G., 4593
Frost, H. B., 4656
Frutchey, C. W., 640
Fryer, H. C., 2779
Fuchinoue, H., 3270
Fuchinoue, Y., 3270
Fuchs de Krapovickas, A. M., 1757
Fuchs, H., 3817
Fuerst, R., 1220
Fujii, T., 1492, 3892–5, 4014, 4028, 4055
Fujii, Y., 520
Fujise, K., 4423
Fujishita, N., 3588
Fujiwara, M., 1520
Fukasawa, H., 1520, 2743, 4038
Fukumi, H., 2506
Fukushima, E., 4241, 4780
Fumigalli, A., 2839, 2851
Funk, T., 888
Funke, C., 596
Furness, G., 2540
Furusato, K., 2236, 3875
Furutani, Y., 4881
Futrell, M. C., 149, 1338, 2795, 2850, 2862, 3218
Futrell, N. S., 2856
Fuwa, H., 460
Fyfe, J. L., 13, 2689, 3081, 4306

Gableman, W. H., 191
Gábriel, A. (Mrs.), 2620
Gadgil, M. V., 3558
Gadkari, P. D., 726
Gadžiev, T. Ju., 886, 3352
Gagnieu, A., 3832
Gahan, P. S., 3748
Galárraga, J. R., 2802
Galet, M. P., 2217
Galeev, G. S., 116, 443, 2919
Galinat, W. C., 1634
Galka, A. T., 993
Gallardo, R. C., 3016
Gallegly, M. E., 669–70, 3155, 4406
Gallus, H. P. C., 1028
Gallwey, B. M. G., 1564
Gamble, E. E., 2913
Ganesan, A. T., 1900, 4915, 4921, 4924
Gangolly, S. R., 2430
Gangulee, H. C., 3001
Gaponenkov, T. K., 2747
Garber, E. D., 1991
Garbuzova, D. A., 829, 2016
García, C., 812
García, L. A., 2808
García, M., 2811
García Alvarez, R., 3363
García Rada, G., 2840
Gardner, C. O., 1339, 4354
Gargiulo, A., 2237
Garnjobst, L., 2507
Garretsen, F., 921
Garrigues, R., 77
Gärtner, K., 494
Garza F., E., 2859
Gascon, J. P., 859–60
Gaskill, J. O., 1944
Gaskin, T. A., 1431, 2785
Gates, C. E., 3687
Gathergood, A. L., 222
Gathy, P., 2295, 4733
Gaudineau, M., 4789
Gaul, H., 481, 490, 1248, 1649, 1664, 2966, 3784
Gauze, G. F., 4917
Gavrilov, G., 725
Geddes, W. F., 44

Gedz', S. M., 3160
Gehrke, C. W., 465
Geidel, H., 677, 1249, 1820, 3135, 3783, 4401
Geis, J. R., 2869
Geisler, G., 945, 4711
Gelin, O., 4895
Gemma, T., 1951
Genčev, G., 391, 2924
Genel, M. R., 4108
Generalov, J. F., 2394
Genkel', P. A., 2714–5
Genter, C. F., 458, 4141
Gern, A. P., 630
George, R. A. T., 4771
George, T. N., 3731
Georgescu, M., 2362
Georgiev, G. N., 2764
Georgieva, J., *see* Georgieva-Todorova, J.
Georgieva, R., 3134, 3493
Georgieva-Todorova, J., 3134, 3301
Gerasimova-Navašina, E. N., 3739
Gerhard, H., 2246
Gerhold, H. D., 1234
Gerrish, E. E., 451
Gerritsen, C. J., 3355
Gerritsen, J. D., 2104
Gerschman, R., 1155
Geršteĭn, L. A., 2092
Gerstel, D. U., 4445
Gfeller, F., 3939
Gheiking, A., 4564, 4877
Ghose, R. L. M., 2998, 3921
Ghosheh, N., 3409
Giacometti, D. C., 3367
Giard, J., 3296
Gibler, J. W., 2800, 2807
Gibson, A., 3681
Gibson, P. B., 3034
Gigante, R., 3165
Gilbert, D. L., 1155
Gilbert, J. C., 1017
Giles, J. E., 4853
Giles, N. H., 1374, 1392, 2508, 2534, 3652
Gill, N. T., 3575
Gilliland, R. B., 2408
Gilman, R. L., 172
Gilmartin, A. J., 3377
Gilmour, J. S. L., 2564
Giménez Martín, G., 3508
Giosan, N., 1618
Girard, F., 1366
Girotto, G., 4319
Gladstones, J. S., 3110
Glass, B., 1074, 1082
Glavinič, *see* Glavinić
Glavinić, R., 1172, 1414, 3842–3
Glavinitch, *see* Glavinić
Glazunov, N. D., 1476
Gleisberg, W., 871
Glenday, A. C., 547
Glendinning, D. R., 808, 4547
Glieden, W., 3151
Gliha-Botić, N., 3475
Glouchtenko, *see* Gluščenko
Gluhen'kij, G. N., 3348
Gluscenko, I. E., *see* Gluščenko, I. E.
Gluščenko, I. E., 58, 2451, 2558, 3716, 3845
Glushchenko, *see* Gluščenko
Goch, D. G., 3610
Godeck, W., 3084
Goering, K. J., 1666
Goffart, H., 3164
Gol'bek, A. K., 341
Gol'dgauzen, M. K., 991
Goldschmidt, R. B., 3662
Goldstein, P., 1072
Gollub, E. G., 1161
Gomi, K., 3250
Gončarik, M. N., 982
Gonet, A., 3461
Goodgal, S. H., 1074
Gontjurov, I. M., 4829
González, F. F., 4712
González, M., 3080
Gopalakrishnan, R., 2341
Goplen, B. E., 3618
Goode, M. J., 3481, 3485
Goodey, J. B., 2872
Goodsell, S. F., 509
Goplen, B. P., 555, 615
Gordon, S. A., 47
Gori, C., 3463
Gorina, E. D., 1578
Gorter, G. J. M., *see* Gorter, G. J. M. A.
Gorter, G. J. M. A., 402, 416, 2982
Gorz, H. J., 1317, 4351, 4354
Gosi, L., 2915
Goto, K., 1511, 1661, 3879, 3885–6
Goto, T., 1215, 2479
Goto, Y., 1717, 2031
Gotoh, *see* Goto
Gots, J. S., 1161
Gottlieb, D., 1546
Gottschalk, W., 3140, 4844–5
Gough, F. J., 4406
Gould, F. W., 584, 1749
Govinda Iyer, T. A., 1112
Govinda Rao, P., 3070
Govindu, H. O., 1432
Gowen, F. A., 681
Grabe, D. F., 2707
Graeber, W., 1611, 2900
Graf, A., 1948
Graf, G. E., 1626, 2938
Grafius, J. E., 206, 1318, 4129
Grafl, P., 2686
Graham, K., 655
Graham, R. A., 3545–6
Graham, T. W., 1311
Gran, Ž., *see* Grand, J.
Grand, J., 4684
Grande, M. Durán, *see* Durán Grande, M.
Grant, A. M., 1108
Grant, T. J., 894
Grant, U. J., 436
Grasso, V., 4130
Graumann, H. O., 3032
Gray, E. G., 4012
Gray, G. E. J., 214
Grebenščikov, I., 386
Green, G. J., 335, 1558, 2837, 2845, 2847, 4101
Greenshields, J. E. R., 137, 555, 615, 3025, 3027, 3618, 4352
Greer, S., 2556, 3695
Gregor, J. W., 539
Gregory, W. C., 195, 1310, 1319, 2465, 3971
Gricenko, R. I., 2986
Griffin, D. M., 3681
Griffiths, D. J., 1596
Grigg, G. W., 3713
Grillot, G., 4021, 4262
Grillot, M., 4148
Grimaldi, A., 4314
Grin'ko, T. F., 1964
Griško, N. N., 3321
Grissom, D. B., 575
Grogan, C. O., 465, 1620–1, 2399, 2930
Groman, N. B., 3670
Gross, H. D., 602, 4321
Grosso, J., 1320
Grubov, V. I., 1179
Grümmer, G., 4851
Grun, P., 4795
Grundmann, E., 3823
Grunn, P., 664
Gruzl, F., 4067
Guard, A. T., 4572
Gudzenko, A. A., 2129
Guha, B. C., 521, 4251
Guild, W. R., 3639
Gulidova, I. V., 2090
Gullett, E. A., 3450–2
Gunckel, J. E., 50
Günther, E., 1012, 1020, 4846, 4851
Günther, G., 1042
Günther, H., 2247
Gupta, M. L., 317
Gupta, S. S., 3533
Gupta, Y. P., 4859
Gupte, V. V., 3207
Gurgel, J. T. A., 4858
Gursham Singh, 3287
Guržieva, A. V., 116
Gurzij, E. S., 744
Gustafsson, Å., 483, 1168, 2290, 4727
Gustavsson, A., 245–6
Gutiérrez, M., 3188
Gutiérrez Cruz, P., 2801
Gutknecht, J., 4451
Gutstein, I., *see* Gutstin, Y.
Gutstin, Y., 4490, 4505
Guttstein, I., *see* Gutstin, Y.
Gutz, H., 1162
Guyot, L., 2733
Gvozdeva, Z. V., 2033, 4573

Haarer, A. E., 804
Haas, F. L., 1169, 1381, 3709
Haber, E. S., 3537
Hačatrjan, S. S., 938
Hackbarth, J., 1787
Hackerott, H. L., 604, 4331
Hadder, J. C., 3727
Hadley, H. H., 4232
Hadorn, E., 1134
Hadžinov, M. I., 454
Hafiz, A., 3534
Haga, T., 1699–704
Hagberg, A., 2967
Hagedorn, D. J., 1437
Hageman, R. H., 150
Hahn, P., 2299
Haigh, J. C., 4770
Hair, J. B., 4736
Håkansson, A., 977, 1603
Halais, P., 4487
Haldane, J. B. S., 14, 3730
Halick, J. V., 525
Hall, H. H., 357
Halma, M., 763
Hamada, H., 3595
Hammond, P. S., 4548
Hanada, K., 1575
Hanaoka, M., 3753
Hänsel, H., 3806, 3994
Hansen, C. J., 2141
Hansen, J. E., 3077
Hanson, A. A., 3033

Hanson, C. H., 3046
Hanson, W. D., 1175
Hanway, D. G., 1339, 2699
Harada, K., 3267, 4075
Harada, S., 4542
Harberd, D. J., 1120, 3062, 3789
Hårdh, J. E., 3382
Hardin, J. W., 2537
Hardy, R., 2665
Hare, W. W., 168–9, 833
Hariras Navkal, 1874
Haritonov, A. M., 3354
Harlan, J. R., 196, 3044, 4294, 4301
Harland, S. C., 15, 735, 4673
Harler, C. R., 2003
Harm, W., 3644
Harpstead, D. D., 488
Harris, E. D. (Jun.), 4200
Harris, H., 43
Harris, H. C., 172
Harris, L., 658
Harris, R. H., 311–2, 1669, 2776
Harris, R. V., 4590
Harrison, M. A., 408
Harrison, M. N., 2927
Hart, H., 2828, 2855
Hartley, C. W. S., 857, 4575
Hartley, W., 538
Hartman, H., 3344
Hartman, P. E., 12, 1074
Hartman, Z., 12
Harvey, T. L., 604, 4331
Hasegawa, S., 1844
Hashimoto, K., 2493
Hasitschka-Jenschke, G., 4798
Haskell, G. M., 2183
Haskins, F. A., 1317, 4351
Haspelová, A., 3613
Hastie, M. S., 3175
Hastings, W. R., 4778
Hassebrauk, K., 332, 1561
Hatamura, M., 1099
Hatano, R., 4264
Hatheway, W. H., 4179
Haugdal, S., 323
Haupt, W., 1044
Haus, T. E., 1668
Haussdörfer, M., 3154, 4403
Haussmann, G., 1759, 4313
Hawkins, G. E., 153
Hawthorne, P. L., 4692
Hayashi, J., 3007, 4242
Hayashi, Z., 4250
Hayden, E. B. (Jun.), 340, 2813, 2835
Hayes, H. K., 1363, 2423
Haylett, D. G., 3934
Hayman, B. I., 1126, 3648
Hayne, E. G., 2805
Haynes, F. L., 660
Hayot, H., 758, 768, 1927, 4492
Hazama, K., 56
Head, S. C., 4362
Hebert, L. P., 1920, 3240
Hecht, L. I., 1074
Hedberg, O., 4299
Heddle, R. G., 4285
Heermann, R. M., 2824
Hege, H., 1245–52
Heggestad, H. E., 799, 1320
Heggli, M., 2065, 2198
Hegwood, M. P., 4613
Heilbronn, S., 3833
Heimer, H. T., 2038
Heimsch, C., 1738
Heinrichs, D. H., 552, 3029, 4322–3
Heiser, C. B. (Jun.), 3279–80
Heitmüller, H.-H., 2259–62
Helmskij, M. Z., 1973
Helle, C. F., 2058
Hellinga, G., 4743
Helm, J., 625, 1793, 2313
Hely, P. C., 891
Hemmi, S., 3470–1
Henderson, I. F., 1071
Henderson, R. G., 4538
Henderson, W. D., 1071
Henke, O., 4721
Henmi, *see* Hemmi
Henry, V. C. R., 3940
Henson, E. R., 1087
Henson, L., 1433, 4334
Heppel, L. A., 1074
Herd, G. W., 424
Hermsen, T. G. T., 266
Hernandez, T. P., 1842
Herrera Arangüena, J., 733
Herriott, R. M., 1074, 2530
Herrmann, J., 3146
Hershey, A. D., 143, 3949
Hesling, J. J., 1467
Hesse, C. O., 2141
Hesseltine, C. W., 4761
Hey, A., 700
Heybroek, H. M., 958, 4750
Heyes, J. K., 3744
Heyland-Steinhilber, H., 4371
Heyne, E. G., 2760, 2833
Hevert, L. P., 761
Hickman, C. J., 2716
Hicks, F. W., 2683
Hidalgo, D. L., 2216
Hiemeleers, J., 3329
Hiepko, G., 1724
Hiesey, W. M., 142, 540, 3788, 3948
Hietala, P. K., 1608
Higazy, *see* Hijazi
Higgins, B. B., 902
Higgins, R. P., 894
Highkin, H. R., 151–2
Hijazi, M. K., 3362
Hildalgo Gato, E., 3539
Hildebrand, A. A., 2379
Hildebrandt, W., 1231
Hilder, G. B., 3009
Hill, A. R., 918
Hill, D. D., 2428
Hill, H. D., 578
Hill, R. F., 2552
Hilpert, G., 373, 4708
Hilu, H. M., 342
Himes, M., 3749
Hind, R. A., 220
Hinfner, K., 2612
Hino, S., 2491
Hinshelwood, C., 41
Hirayoshi, I., 2472, 3594
Hiroe, M., 1056
Hirota, Y., 89
Hirst, R. H., 222
Hisayasu, Y., 4075
Hitier, H., 789
Hitrinskij, V. F., 4005
Hivon, K. J., 1041
Hjelmqvist, H., 2109, 2685, 2762
Hłyń, M, 4641
Hlystov, L. A., 2347
Hodžaev, M. M., 2335
Hoen, K., 1321
Hoffmann-Ostenhof, O., 4797
Hoffmann, W., 3291, 3803–4
Hofmann, E. L., 946, 2240
Hofmeyr, J. D. F., 395, 4190
Hogaboam, G. J., 1952
Hohlov, S. S., 2560
Holden, J. H. W., 1596
Holienka, J., 3818
Hollaender, A., 3700
Holliday, P., 818, 2012
Holloway, B. W., 2523, 2531
Holme Hansen, H. H., 2645
Holmes, F. O., 3502, 4855
Holmes, F. W., 4751
Holt, E. C., 3036
Holter, H., 4924
Holton, C. S., 1086, 1434, 1551, 2287
Holzer, K., 3431
Honkavaara, T., 2730
Homola, J., 1801
Honma, S., 4818
Hooker, A. L., 363, 1343, 1592, 2890
Hooper, D. J., 2872
Hoover, M. W., 161–2
Hoppe, W., 3480
Höppner, E., 1820, 3135, 4401
Horber, E., 1272
Hörberg, Y., 485, 2968, 3121
Hore, H. L., 4027
Horn, N. L., 4692
Horner, T. W., 350, 973, 1004, 1039, 2375
Hornsey, S., 2580
Horovitz, N., 2768
Horovitz, S., 3378
Horowitz, N. H., 2516
Horton, J., 650
Horváth, A., 1114, 1797, 2617, 3607
Horváth, J., 3672
Horváth, P., 534, 2614
Ho Sik Kim, 44
Hotchkiss, R. D., 32, 1074, 2539
Hougas, R. W., 641, 1814, 4377–8, 4385, 4393
Hough, L. F., 924, 4613
House, L. R., 1630, 4186
Houston, B. R., 1435
Houtzagers, G., 4731
Hovadík, A., 2323
Hoven, *see* Hovin
Hovin, A. W., 570, 1322, 1382, 4279
Howard, A., 2580
Howard, G. A., 2015
Howard, H. W., 1831, 3801
Howatt, J. L., 1826
Howe, W. L., 603
Howell, R. W., 2377
Howitt, A. J., 515
Howlett, F. S., 2120
Hoyman, W. G., 661
Hozumi, K., 493
Hristov, M., 2572
Hrobryh, N. D., 1026
Hrushovetz, S. B., 343
Hruška, L., 3158
Hseu, *see* Hsu
Hsi, Y., 722
Hsu, C.-C., 2207
Hsu, K. J., 2809, 2820, 2825–6
Hsu, Y., 2493
Hu, C.-H., 1707
Hu, T.-H., 1919
Huang, C., 1104
Huang, C.-W., 2995
Huang, H.-C., 4060
Huang, T.-C., 1683
Hubbeling, N., 2367

Huber, J., 4499
Huber, L. L., 2931
Hudajkuliev, A., 4455
Hudjak, M. I., 4062
Hudson, J. P., 2432–40
Huey, E., 4063
Huffman, M. D., 362
Hughes, H. D., 1087
Hughes, L. C., 3176
Hughes, L. E. C., 4936
Hughes, W. L., 2575
Huijsman, C. A., 3162, 4416
Hujieda, K., 3584
Hulbary, R. L., 3456
Hulewicz, D., 1731
Hull, J. W., 4682–3
Hülsmann, G., 4348
Hungate, F. P., 3637
Hunt, I. V., 4285
Huntley, D. N., 496
Hurst, D. D., 18
Hurter, N., 2132
Huse, S., 955
Husfeld, B., 2213, 2224
Hussein, A. M., 3211
Hustrulid, A., 462
Hutchinson, J., 4943
Hutton, E. M., 3049, 4853
Huyskes, J. A., 986, 2331, 4814
Hwang, *see* Huang
Hyde, B. B., 1391
Hylander, N., 2278, 2280
Hyun, S. K., 97

I, F., 1841
Iacopini, P., 2199
Iazagi, A., 1469
Ibrahim, I. A., *see* Ibrahim, I. 'A.
Ibrahim, I. 'A., 2984
Idelman, S., 2570
Igasaki, T., 493
Ihara, Y., 747
Ihm, P., 1
Iijima, T., 89
Iino, T., 1383, 3896
Ikeda, N., 2401–2, 4909
Ikeda, Y., 2509, 2569
Ikehata, Y., 3547
Il'ina, P. R., 1898
Il'ina, T. A., 3705
Il'inskij, A. A., 2201
Iljina, *see* Il'ina
Ille, C., 4524, 4534, 4877
Illies, Z. M., 2248
Iltis, J., 4434
Imai, M., 1059–60
Imazu, T., 3588
Immer, F. R., 2423
Imšeneckij, A. A., 2489, 3549
Imshenezkii, *see* Imšeneckij
Inaba, T., 4542
Inamori, Y., 2887
Ingalsbe, D. W., 2152
Ink, D. P., 917, 919
Inman, L. L., 2815, 2939
Innamorati, M., 2748, 4079
Inosaka, M., 1712
Inoue, J., 2972, 3368
Inoue, Y., 1048
Inouye, *see* Inoue
Ioan, E., 4523–4, 4564
Ionescu-Sisești, G., 287
Iordăchescu, C., 2326
Iranzo, J. Royo, *see* Royo Iranzo, J.
Irgens-Moller, H., 967
Irvine, J. E., 4442
Iseki, S., 2517
Ishibashi, K., 2236
Ishigaki, K., 3269
Ishii, K., 4799
Ishikawa, T., 55, 1170
Ishitani, C., 2509
Isičko, M. P., 3068
István, K., 2619
Ito, H., 999, 2344, 3488, 4831
Ito, T., 3661
Ivančenko, G. Z., 1818
Ivanoff, S. S., 365
Ivanov, A. P., 1090
Ivanov, I. M., 3445
Ivanova, K. V., 1024
Ivanova, Z. I., 4608
Ivanovskij, A. I., 2632
Iyengar, N. K., 2652, 2655, 3191–2
Iyengar, R. L. N., 1877
Iversen, C. E., 601
Iwamoto, K., 4250
Iyama, S., 3881–2
Iyengar, G. S., 505
Iyengar, K. G., 505, 507
Iyengar, R. L. N., 727
Iyer, V. N., 3707
Izard, C., 789–90, 3255
Izquierdo Tamayo, A., 3258

J., M., 3432
Jabber, M. A., 1064
Jablokov, A. S., 948, 956
Jackson, A. A., 3455
Jackson, G. C., 4678
Jackson, J. E., 1101
Jackson, R. C., 1193, 4572
Jackson, W. D., 959, 4791
Jacob, F., 1061, 1074, 1130
Jacobsen, B., 4375
Jacobsen, P., 827
Jacquard, P., 3846
Jagatheesan, D., 724
Jähnl, G., 1795, 1839, 3816
Jakimov, E. S., 4619
Jakovak, A. S., 4540
Jakubciner, N. M., 316
Jakuševskij, E. S., 1687
Jakuškin, I. V., 1892, 1957
Jalas, J., 614
Jalihal, K. A., 4528
Jamblinne, A. T. de, *see* Jamblinne de Meux, A. T. de
Jamblinne de Meux, A. de, *see* Jamblinne de Meux, A. T. de
Jamblinne de Meux, A. T. de, 98, 1235
James, A. P., 1384
James, E., 1416
Janick, J., 1385
Jannaccone, A., 4074
Jánossy, A., 2610
Jansen, E. C., 4732
Janson, F., 4725
Jaranowski, J., 4356
Jarecko-Hmelevskij, A. A., 3732
Jary, C. L., 826
Jeanneau, Y., 632
Jeater, A., 4084
Jebrak, *see* Žebrak
Jekabsons, V., 3079
Jenkins, B. C., 235, 276, 282, 2473
Jenkins, J. M. (Jun.), 992
Jenkins, M. T., 433, 468, 1323, 2490, 4163
Jenkins, W. F., 1038
Jenkinson, J. G., 985
Jennings, D. L., 785
Jennings, P. A., 2531
Jennings, P. R., 2956
Jensen, N. F., 1478, 2673, 2889
Jessup, R. J., 4383
Jeswani, L. M., 832
Jinks, J. L., 35, 3676
Jiménez, F. A., 2022
Jiménez, H., 3378
Jinno, T., 912–4, 4681
Joachim, H. F., 2249, 3426
Jodon, N. E., 517, 1693, 2701
Joginder Singh, 470
Joglekar, R. G., 3294
Johansen, R., *see* Johansen, R. H.
Johansen, R. H., 662, 706
Johnson, G., 692
Johnson, H. W., 580, 1175, 2374
Johnson, I. J., 1054, 4165
Johnson, K. W., 3530
Johnson, L. P. V., 2268
Johnson, T., 242, 335, 2831, 2837, 2845, 2847, 4101
Johnson, V. A., 2796
Johnsson, H., 962, 2276
Johnston, C. O., 1559, 2805, 2830, 2833, 2846
Johnston, T. H., 516, 532, 4237
Jones, D. F., 190, 441, 455, 899
Jones, E. D., 674
Jones, F. G. W., 1833, 4411
Jones, H. A., 2328
Jones, J. M., 1596
Jones, S. T., 976
Jonkers, H., 979, 4693
Joranson, P. N., 4744
Jordan, C., 929
Jordović, M., 4637
Josefsson, A., 4370
Josephson, L. M., 4166
Joshi, A. B., 832, 3919
Joshi, V. K., 4431
Jucci, C., 2484
Judin, V. F., 464
Jugenheimer, R. W., 1324, 1347, 4169
Julén, G., 548, 3055
Junges, W., 2717
Jur'ev, V. Ja., 3978
Jurina, O. V., 4819
Jusubov, A. M., 4633

K., L., 1268, 2392
Kaartinen, H., 2730
Kabanov, P. G., 3855
Kac, N. Ja., 2565
Kác, V., 4839
Kačalova, Z. P., 2786
Kadam, B. S., 3914
Kadinopoulos, C. D., 2397
Kădrev, T., 57
Käfer, E., 39, 3952
Kageyama, M., 3586
Kahn, R. P., 1436
Kainski, J. M., 1438
Kaiwar, S. R., 1288, 1857, 4446
Kajjari, N. B., 506
Kalinin, M. S., 388
Kalmykov, S. S., 2121
Kaloyereas, S. A., 4767
Kaltofen, H., 6, 2445
Kalton, R. R., 1303
Kalyanaraman, S. M., 123–4, 1850–1, 1882

Kamal, M., 731
Kameraz, A. Ja., 704, 1827, 3133
Kamimura, S., 3470–1
Kammacher, P. A., 1866
Kamra, O. P., 1386
Kanaš, M., 1878
Kanaš, S., 3183
Kandaswamy, M., 2654
Kandaswamy, P. A., 765
Kaneda, C., 491
Kanno, C., 2030–1
Kantorovič, A. V., 2077
Kao, P.-L., 4828
Kaplan, R. W., 2541, 2557
Kapoor, P. N., 317
Kappert, H., 19, 1229
Kapur, M. N., 3609
Karamyšev, V. P., 1292
Karaul'nyj-Zverev, N. V., 358, 2888
Karceva, K. V., 699
Kardo-Sysoeva, E. K., 2635
Kargl, R., 1982
Karpov, G. K., 2100
Karpovič, N. F., 4338
Karrer, W., 4937
Karschon, R., 1236
Kartha, A. R. S., 3285
Kassanis, B., 1836
Kassem, E. S., *see* Kassim, A. S.
Kassim, A. S., 2903
Kasymov, B., 3069
Katar'jan, T. G., 3399
Katayama, T., 4243
Katayama, Y., 1216, 2936
Katin-Jarcev, L. V., 631
Katinskaja, Ju. K., 927
Kato, K., 567
Katô, S., 2977, 3556
Kato, Y., 1205, 2573
Kattan, A. A., 164, 166, 710
Katyal, S. L., 2430
Katz, B., 4927
Kaufmann, B. P., 145, 3953
Kaufmann, M. J., 1043
Kaufmann, M. L., 4009
Kaushal, P. K., 1755
Kavanagh, L. R., 1647
Kawagoe, H., 3368, 4660
Kawai, S., 3269
Kawamura, F., 2000
Kawanabe, S., 3099
Kawase, T., 529
Kawatei, K., 3513–5
Kazakov, A. A., 975
Kazimierski, T., 4342
Keane, F. W. L., 3349
Keck, K., 4797
Kedharnath, S., 4173
Kedrin, S. P., 2117, 4639
Kedrova, O., 2200
Keep, E., 4594, 4596–7
Keestra, R., 3242
Kehr, A. E., 642, 650, 976
Keim, W. F., 1357
Keith, W. M. (Jun.), 3420
Keitt, G. W., 197, 878, 3337–8, 4624
Kelleher, T. M., 1615
Kellenberger, E., 3782
Keller, E. R., 1811, 3137
Keller, K. R., 1329
Kelly, A. F., 4280
Kemmerer, H. R., 3063
Kempthorne, O., 2417
Kendrick, E. L., 1551–2, 2787
Kennerly, A. B., 3189
Kenneth, J. H., 1071
Kent, N. L., 1587
Kent-Jones, D. W., 1092
Keppie, J. L., 1745
Keppler, E., 198
Kerber, E. R., 1558, 2758, 3619
Kerr, E. A., 1008, 3447–8
Kerr, W. E., 415, 423
Kesava Iyengar, N., 719, 3187, 3193, 4428
Keuls, M., 437
Khalil, A. R., 26
Khan, A., 3067
Khan, E. M., 3209
Khan, S., 4239
Khana, R. C., 4457
Khishin, 'A. 'A., 4086
Khoo, U., 455–6
Khoshoo, T. N., 3309, 3434
Khristides, B. G., 4307
Kibukamusoke, D. E. B., 3171
Kiellander, C. L., 965–6
Kiesling, R. L., 1318
Kihara, H., 347, 2483, 2577–601, 3868, 3876, 4037, 4116–7
Kihlberg, G., 45
Kihlman, B. A., 83, 4861
Kikuchi, M., 2774
Kim, Ho Sik, *see* Ho Sik Kim
Kim, W. S., 1437
Kimball, R. F., 2466
Kimber, G., 3203
Kimoto, S., 1750
Kimura, K., 2596, 3589, 3773–4
Kimura, M., 37, 2498, 3688, 3897–901
Kinbacher, E. J., 2731
King, C. L., 4110
King, E., 15
King, H. E., 3180, 4454
King, J. R., 651
King, Y. K., 2738
Király, Z., 1569, 4081, 4104
Kirby-Smith, J. S., 86
Kirchner, C., 1387
Kiričenko, F. G., 4061
Kiričenko, L. I., 971
Kiriyama, T., 4048, 4215–6
Kirkham, D. S., 2116
Kishikawa, H., 1779, 4248
Kiskin, P. H., 3408
Kishimoto, O., 2401
Kiss, Á., 2625, 2896, 3985, 3989, 3999
Kiss, E., 4473
Kitajima, H., 4649
Kitamura, S., 3578
Kjelgaard, W. L., 2330
Klämbt, H. D., 3380, 4687
Klapp, E., 3570
Klatt, F., 238
Klav, N. I., 742
Klein, L. G., 3330, 4612
Klepikova, F. S., 4911
Kleyburg, P. L., 1893
Kline, D. M., 3337–8
Klingler, J., 2241
Klingman, G. C., 4113
Klinkowski, M., 3264
Ključareva, M., *see* Ključareva, M. V.
Ključareva, M. V., 1519, 4041
Kloen, D., 1949
Ključko, P. F., 2920
Klug, R. J., 1444, 3702
Klykov, A. P., 3519
Knapp, E., 1796, 1947, 2474
Knapp, R., 3565
Kneebone, W. R., 1325
Knott, D. R., 337, 1567, 2816, 2818, 3620
Knowles, P. F., 1302, 4574
Knowles, R. P., 1326, 3024, 3028
Knight, R. L., 4366, 4594, 4596
Ko, C., 4802
Kobayashi, T., 957, 3585
Kobori, O., 529
Kočetkova, G. V., 4917
Koch, F., 1980
Kocková-Kratochvílová, A., 3557
Koču, *see* Cociu
Koehler, B., 4195
Köhler, E., 707
Kohli, S. P., 1502, 1570
Kohno, N. A., 4741
Kojima, K.-I., 1522
Kokin, J. Ja., 2091
Kolar, J. J., 364
Kol'cova, E. V., 2140
Kole, A. P., 981
Koller, P. C., 3682
Kolomiec, O. K., 1968, 4513
Komarnickaja, A. M., 2151
Komarova, E. S., 934
Komelnicky, G. M., 156
Komemoto, T., 2030–1
Kommedahl, T., 1444
Komoto, Y., 2583
Koncevoj, M. G., 974
Kondakov, N. A., 4471
Kondakova, O. A., 4471
Kondô, S., 3890, 4055
Konišev, P., 734
Konishi, T., 4215–6
Könnecke, G., 110
Konstantinov, P. N., 1421
Konstantinova, A. M., 558
Konvička, O., 2317, 2322–3
Konzak, C. F., 49, 194, 449, 1307, 1327, 2698, 2792
Koo, F. K. S., 4139
Koopman, C., 2647
Koopmans, A., 2577
Kopal, S., 3147
Kopecky, F., 2284
Kopecký, O., 4143
Kopetz, L. M., 22
Kopp, E., 3277
Kordo, T. V., 1262
Koriba, S., 2049–50
Kormos, J., 2023–4
Kornberg, A., 1074
Kornilov, A. A., 463
Korobočkin, I. V., 2782
Korohoda, J., 2371
Koroleva, V. A., 2064
Korpinen, E., 2754
Korobkina, Z. V., 942
Kosikov, K. V., 4919
Košová, V., 3541
Kostina, K. F., 4632
Koteswara Rao, D., 3070
Kotov, M. I., 3567
Kováčik, A., 3300, 4571
Koval', A. S., 392
Kovalev, N. V., 2121, 2147
Kovalevskaja, N. I., 587
Koverga, A. S., 117
Koyama, T., 571
Kozelkov, Ju. I., 4713
Kozera, G., 1583
Kozlova, M. M., 702
Kozłowski, J., 841

Kozma, P., 4709–10
Kozubenko, V. E., 390, 2921
Kraai, A., 3469, 3777
Kraevoj, S. Ja., 1809, 3717
Krahl-Urban, J., 2263
Kramer, A. I., 2735
Kramer, C. Y., 1100, 1111
Kramer, H. H., 4154–5
Krantz, F. A., 657
Kranz, A. R., 1607, 4138
Krapovickas, A., 1757, 1904, 4671
Krasočkin, V. T., 624
Krauss, R. W., 1160
Kravčenko, L. M., 4606
Kreitlow, K. W., 3038
Krexner, R., 4364
Krevčenko, L. E., 2338
Krickl, M., 3464
Kriebel, H. B., 3246, 4520
Krishna Rao, M. S., 4528
Krishna, S., 3006
Krishnaswamy, N., 2659, 4249
Kröber, H., 3336
Krolow, K.-D., 4469
Kronenberg, H. G., 921
Krotov, A. S., 1577
Krug, H., 3990
Kruse, G., 4124, 4137, 4217
Kružilin, A. S., 3715
Kryžanovskij, F. D., 2025, 4035
Ku, M.-M., 4060
Kuan, S.-M., 2411
Kubo, I., 2288
Kubsad, S. C., 1857
Kučerenko, V. S., 1418
Kuchař, F., 4286
Kuckuck, H., 1509, 2097, 4138
Kučumov, P. V., 587, 1537, 3978
Kudejarov, N. I., 2342
Kugler, W. F., 4124, 4137, 4217
Kühn, C. H., *see* Kühn, H. C.
Kühn, H. C., 400, 412–3
Kul'čickaja, Z. A., 1933, 4891
Kuldip Singh Lobana, 3287
Kulik, A. A., 2094
Kulkarni, S. N., 851
Kulkarni, V. K., 1284
Kulkarni, Y. S., 3201
Kumada, S., 1466
Kumar, L. S. S., 1029, 3924, 4667, 4903
Kumasegawa, T., 2027
Kump, M., 4039
Kundzinš, A. V., 3430
Kunitz, M., 1151
Kunjamma, V. K., 4865
Kupcov, A. I., 2047, 2687
Kuperman, F. M., 2875
Küppers-Sonnenberg, G. A., 4787
Kurabayashi, M., 3591
Kurek, L. I., 1150
Kurita, M., 2318
Kuriyama, H., 3003
Kurki, L. M., 3494
Kuroda, S., 3304
Kurose, H., 1903
Kursanov, A. L., 1961
Kushibuchi, K., 491
Kushman, L. J., 163
Kušner, H. F., 3725
Kuspira, J., 263, 2480
Kutuzkina, E. F., 4754
Kuwada, H., 3222–3
Kuz'min, I. A., 2139
Kuznecov, I. V., 2163
Kuznecov, V. V., 3370
Kyrylenko, T. S., 3421

Laby, H., 1770
Lackamp, J. W., 1733, 4310
La Cour, L. F., 3748
Laermans, R., 368
Laffèrs, A., 3369
Lafon, R., 1639, 4789
Lake, E. B., 3182
Lakshimikantham, M., 4484
Lakshmaniah, C. H., 507
Lakshminarayanan, K., 4463
Lal, S. B., 850, 1438
Lambert, A., 4774
Lamberts, H., 3109
Lambeth, V. N., 1843
Lamm, R., 2386
Lammert, A., 3412
Lamey, H. A., 4406
Lamey, H. H., 4624
Lamothe, J., 3242
Lamprecht, H., 3507, 3523–8, 4887–90, 4894
Lana, E. P., 662, 973, 1004, 3537
Landi, R., 7, 2916, 4318
Landmann, W., 2597
Lang, A., 73
Lange - de la Camp, M., 4080
Langenfel'd, V. T., 2302
Langford, M. H., 4581
Langner, W., 947, 2250, 2264
Langridge, J., 3690
Lantz, H. L., 4605
Lao, T.-Y., 3737
Lapins, K., 3349, 3944
Laptev, Ju. P., 1517
La Rotonda, C., 3498
Larroque, P., 3838
Larsen, A., 4466
Larsen, C. M., 1238
Larsen, K., 622, 3073, 4361
Larson, R. H., 672, 983, 4379, 4409
Larson, R. I., 4054
Larsson, G., 4690
Larue, P., 2157
Lascols, X., 1638
Laskowski, W., 1063
Last, F. T., 215
Latuszynski, G., 4536
Laubscher, F. X., 403
Lauche, R., 3569
Laude, H. H., 2780, 4073
Laude, H. M., 4343
Lauer, F. I., 3130
Lauffer, M. A., 3572
Laughnan, J. R., 1388
Laumont, P., 306, 1293, 1770
Lautz, W. B., 799
Lawes, D. A., 3180
Lawrence, C. W., 4136
Lawrence, J. M., 4063
Lawrence, T., 595
Lawrence, W. J. C., 2435, 2439
Lăzărescu, V., 941
Lazarevskij, M. A., 2243
Lazenby, A., 1746
LeBeau, F. J., 2839, 2851
Lebedeff, G. A., 155
Lebedev, D. V., 2559
Lebedev, P. M., 2197
Lebedev, V., 736
Lebedeva, L. Ja., 4719
Lecrenier, A., 4643
Lederberg, E. M., 2524
Lederberg, J., 1121, 1127, 1383, 2410, 3699, 3896
Ledin, R. B., 4676
Ledingham, G. F., 1789
Lee, B., 4063
Lee, B. J. S., 4454
Lee, J. H., 3131, 4386
Lee, S., 4410
Leemans, J. A., 2431
Leeper, P. W., 666
Lefort, M., 1011
Lehman, S. G., 3521
Lehmann, C. O., 1415
Leibundgut, H., 4755
Lein, A., 1246, 3808
Lejeune, A. J., 471
Lelakis, P., 3404
Lele, V. C., 2866–7
Lelley, J., 1463, 4081
Leng, E. R., 4167–8
Lenkov, L. D., 2971
Leonori-Ossicini, A., 333, 4091–2
Leppik, E. E., 3735
Lerman, L. S., 3641
Le Roux, P. M., 417
Le Roy, H. L., 3683
Lescano Alva, M., 3314
Lesik, F. L., 279
Lesley, J. W., 3356, 3492, 4651
Lessells, W. J., 1533
Le Tourneau, D., 4410
Lettre, H., 3759
Leung, *see* Liang
Leupold, U., 1159
Levadoux, L., 3403
Levan, A., 977
Levine, M., 1389
Levinthal, A., 1074
Lewicki, S., 1512, 1521
Lewis, C. F., 721, 1855, 1890
Lewis, D., 189, 3642, 3794, 3831
Lewis, W. M., 3083
Leyvraz, H., 2233
Li, C. C., 1143, 2526, 3537
Li, C.-H., 4159
Li, C.-L., 4756, 4854
Li, H.-L., 1222
Li, H. W., 1914, 2475
Li, K., 43
Li, L., 3166
Li, Y.-H., 2101
Lian, *see* Liang
Liang, H., 1841
Liang, S.-C., 2356
Liang, T.-S., 3167
Liard, O., 3350
Liefstingh, G., 2061–2
Lignon, R., 1475
Lilienfeld, F. A., 3876
Lilly, L. J., 4862
Lilly, P. L., 915
Lima-de-Faria, A., 27, 2455
Limaye, M. R., 1881
Lin, K.-M., 1719
Lin, S.-C., 1841
Linares S., P. J., 2365–6, 2373
Lindegren, C., *see* Lindegren, C. C.
Lindegren, C. C., 474, 1065, 1132, 1390, 1395, 2452, 2491, 2571
Lindegren, G., 1065, 1390, 2491
Linden, D. B., 466
Linder, R., 3830
Linnert, G., 4908
Linnik, E. F., 1409
Linnik, G. N., 682

Linkous, W. N., 458
Lisavenko, M. A., 2083, 3341, 4620
Litt, M., 3668
Little, E. L. (Jun.), 3424
Little, R. R., 3009
Little, T. M., 3653
Lityński, A., 1003, 2026
Liu, J.-S., 1723
Liyanage, D. V., 905, 4672
Llano Gómez, E., 2681
Lo, C.-N., 2113
Lobanov, P. P., 1264
Lochow, J. v., 2608
Locke, S. B., 668
Loebenstein, G., 4849
Loegering, W. Q., 2817, 2869
Loewel, E. L., 1231
Logan, C., 3170, 4459
Loginova, L. G., 2554
Loh, *see* Lo
Loisil, L., 4070
Lokscha, H., 3810
Loladze, V. R., 2228
Loomis, N. H., 3405
Loomis, R. S., 1646
Lord, E., 3204
Louis-Marie, P., 3113
Loutit, J. S., 3671
Löve, Á., 3627, 3629, 3631
Löve, D., 3627, 3629
Loveless, A., 3706
Low, A., 3178
Low, B. L., 1074
Lownsbery, B. F., 2141
Lu, Y.-C., 2376, 1708, 1716
Lubenec, P. A., 1756
Luca, Y. de, 4901
Lucas, G. B., 4947
Luck, J. M., 1078
Luckwill, L. C., 223
Lučnik, Z. I., 2188
Lüdecke, H., 783, 4498
Luig, N. H., 1678
Luk'janenko, P. P., 319, 1500, 4018, 4077
Luke, H. H., 1348, 1591
Lund, J. H., 2079
Lundberg, J., 2296
Lundin, P., 2640
Lundquist,, *see* Lundqvist
Lundqvist, A., 375, 1604
Lundqvist, U., 482–3
Lupaško, I. P., 559
Lupton, F. G. H., 1461, 2783
Luria, S. E., 1133, 3669
Lužný, J., 2323
Luzzati, D., 1166
Lyles, W. E., 149
Lypa, A. L., 3325
Lysenko, O. T., 299, 1494
Lysenko, T. D., 1174, 2126, 3722–3

McClintock, B., 146, 3954
McCloy, E. W., 2548
McClure, F. A., 592
McComb, A. L., 3424
McElroy, W. D., 1074
McElwee, R. L., 4764–5
Macer, R. C. F., 2783
McFadden, A. D., 4009
McFall, E., 3704
McFerran, J., 4842
McGinnis, R. C., 2819, 3621
McGuire, D. C., 1017
McHugh, D., 664
McLeish, J., 3564
Mackay, D. B., 4222
MacKay, K. H., 579
McKee, R. K., 4400
McKelvie, A. D., 807
MacKey, J., 193
McLean, J. G., 643
McMeekin, A. L., 438
McMurtrey, J. E. (Jun.), 1358
McNeal, F. H., 4049
Madhava Rao, V. N., 4664
Magassy, L., 4363
Magness, J. R., 880, 3339
Maggs, D. H., 4598
Magoon, M. L., 4385, 4392–3
Maguire, M. P., 1624
Maheshwari, P., 3927
Mahler, H. R., 1135
Mahoney, D. L., 1385
Mahony, M., 3678
Maini, Nirmal Singh, *see* Nirmal Singh Maini
Majumdar, P. N., 1883, 4429
Makarov, N., 2949
Makarov, P., 2568
Makarova, L. A., 3152
Maksakova, V. M., 2351, 2354
Maksimčuk, L. P., 2769
Malaguti, G., 3378
Malatesta, P., 3768
Malato-Beliz, J., 4064
Mali, L., 4939
Maliani, C., 268, 4316
Maliga, P., 2108
Maljuta, D. I., 1937
Mallah, *see* Al Mallah
Maltzahn, K. E. von, 3486
Mamporija, F. D., 4653
Manaresi, A., 2239
Mandell, J. D., 143, 3949
Mándy, Gy, 4511
Mann, A. J., 3349
Manner, R., 237, 3098, 3100, 3118, 3123–4, 3289–90, 3292, 3479
Manning, H. L., 3171
Manolov, I., 734, 3185
Mansfeld, R., 1415
Manželij, I. I., 1473
Manzer, F., 650
Manzujk, V. T., 314, 2751
Marappan, P. V., 1858
Marble, V. L., 4231
Marcano Coello, L., 2365–6, 2373
Marcou, D., 3835
Margara, J., 4509
Margerie-Hottinguer, H. de, 3834
Mariani, M., 2757
Marić, M., 1631
Marinič, P. E., 3851
Marinkov, E., 2924
Marino, G., 75
Mar'jahina, I. Ja, 303, 2875
Markitantova, A. V., 1580
Markarian, D., 4043, 4276
Markus, R., 1766
Marmur, J., 3668
Marquardt, H., 3823
Martín C., A., 2827
Martin, D. L., 222
Martin, J. A., 845
Martin, J. T., 2071
Martinello, M., 3950
Maruyama, A., 1705
Maruyama, S., 1701–4
Marx, R., 1794
Mascarenhas, F. O. da F., 2788
Maslova, T. A., 4556
Massee, A. M., 4591
Massenot, M., 2733, 4087
Massey, G. D., 4024
Massey, P. H. (Jun.), 709, 4871
Masson, A. B., 2798
Mastenbroek, C., 2690
Masuyama, M., 1099
Mateev, N. D., 3216
Mather, K., 3679
Matherne, R. J., 761, 3240
Matheson, E. M., 1507
Matheson, K. L., 3076
Mathews, W. A., 3168
Mathlein, R., 691
Mathon, C.-C., 1171, 2742, 3714, 3844
Mathur, R. S., 850
Mathur, S. C., 850
Matinjan, A. B., 3271
Matney, T. S., 3698
Maton, K. Š., *see* Mathon, C.-C.
Matsui, C., 1137, 2515
Matsui, H., 3268
Matsumoto, K., 346, 2483
Matsumura, M., 94
Matsumura, S., 1492, 2476, 2483, 3075, 3592, 3869, 3877–8, 3892–4, 4014, 4052, 4055
Matsumura, T., 3583
Matsuo, T., 4240
Matsuoka, K., 4566
Matsuoka, M., 3579–80
Matsushima, T., 3702
Matsuura, H., 2456
Matweef, M., 1460
Matzinger, D. F., 17
Matzner, F., 2111
Maurer, K. J., 4602
Maxwell, N., 2180, 4679–80
Mazia, D., 1074
Mazlumov, A. L., 1942, 1959, 4508
Mazurin, S. A., 1689
Mazzani, B., 847, 2037, 3297
Mazzei, A., 4704
Meader, E. M., 3453
Medvedeva, G. B., 1518, 4031
Medvedeva, O. A., 2185
Mehra, K. L., 3772
Mehta, R. K., 1776, 3050
Mehta, T. R., 3909
Meier, W., 1798, 3120
Meiners, J. P., 1439–40
Meiselman, N., 792
Melacrinos, A., 288, 4019
Melakrinos, *see* Melacrinos
Melchers, L. E., 2991
Melechen, N. E., 143
Melehov, I. S., 4724
Melent'eva, E. V., 394
Meleškin, A. S., 3459
Meletti, P., 2587, 2746, 3462
Mello-Sampayo, T., 4236
Melnyk, J. H., 3621
Melville, R., 3429
Memon, A. M., 1865
Méndez R., E. D., 716, 1885, 4435
Méndez-Roig, F., 1926
Méneret, G., 2019
Menezes, O. B. de, 623, 1052, 4902
Menkes, J., *see* Menkes, Y.
Menkes, Y., 4131
Meredith, W. O. S., 472, 495, 4205
Merh, J. L., 851
Meppelink, E. K., 1452, 2723

Mergen, F., 964, 3437
Mericle, L. W., 2962
Mericle, P. R., 2962
Merkle, O. G., 3218
Merny, G., 3015
Merriam, D., 652–4
Mertens, T. R., 2702
Mertz, E. T., 4189
Merwine, N. C., 158
Merz, T., 83
Mesa Bernal, D., 4180
Meščerov, E. T., 998, 3487
Messeri, E., 3104
Messeri, P., 4781
Messiaen, C. M., 1639
Metzenberg, R. L., 2551
Meyer, A., 4725
Meyer, H., 2251
Meyer, H. M., 667
Meyer, J. R., 1873
Mia, A. J., 746
Michaelis, A., 4929
Michaelis, P., 34, 1139, 3680
Michaelson, M. E., 465
Michel, B. E., 3456
Michie, D., 205, 3724
Micke, A., 616
Middendorf, M., 4197
Middlekauff, J. E., 2491
Miguel, M. C. C., 101
Mihalca, V., 287
Mihov, A., 2389
Mikaelsen, K., 349, 3824, 4337
Mikami, T., 3304
Mikell, J. J., 1842
Mikkelsen, K., 253
Mikula, B., 4150
Mikula, B. C., 1690
Mildner, E., 627, 2299
Miles, S. R., 469, 1353
Milinkovic, V., 1740
Miller, E. V., 1079
Miller, J. C., 651, 1842, 4422, 4692
Miller, J. D., 231
Miller, M. D., 4231
Miller, P. A., 1328, 1346, 4447
Mills, W. R., 665
Mil'man, G. B., 1689
Mindlin, S. Z., 1128, 3693
Minessy, *see* Minisi
Minisi, F. A., 3362
Minkevič, I. A., 1263
Minko, D., 1878
Miravalle, R. J., 4157
Mirsijanov, V. Z., 3335
Mirsky, A. E., 64, 1074, 1188
Miržinska, J., 2749
Miščenko, O. N., 2145
Misra, D. P., 2866
Mišurenko, A. G., 3390
Mita, K., 491
Mitchell, H. K., 1074, 2551
Mitidieri, J., 4858
Mito, K., 1520
Mitra, A. K., 1570
Mitsuishi, S., 1750–1
Mitsuoka, S., 2050
Mittelholzer, A. S., 134, 1773
Miwa, T., 2158
Miyamoto, T., 1695
Miyamoto, Y., 2000
Miyazawa, A., 3875
Miyoshi, R., 658
Mizushima, M., 2279
Mkrtčjan, A. A., 302
Mleşniţă, L., 4553
Mo, P.-C., 1914
Moav, R., 1988
Möbius, H.-J., 5
Mochizuki, A., 282, 348, 2476
Mode, C. J., 2983
Modylevs'kyj, Ja. S., 234, 2591
Moës, A., 1655, 1684, 4213
Moffett, A. A., 4576
Moh, C. C., 148
Mohamed, A. H., *see* Muhammad, 'A. H.
Mohlenbrock, R. H. (Jun.), 620, 3116
Moja, A., 4784, 4808
Mok, B. C., *see* Mo, P.-C.
Moll, R. H., 2951
Möller, K. H., 708, 4403
Monge, F. F., 465
Monotani, Y., 3422
Montes, M. Collado, *see* Collado Montes, M.
Montgomery, H. B. S., 4599
Montserin, B. G., 819
Monzón, D., 1610
Moon, H. H., 3339
Moore, E. L., 170–1, 1311, 1329, 4537
Moore, H. C., 656
Moore, H. E. (Jun.), 3388
Moore, J. N., 164, 166
Moore, W. C., 4407
Moran, P. A. P., 3685–6
Morandini, R., 4723
Morbad, I. R., 856, 3535
Moreels, 2729
Morettini, A., 2150, 3374
Morgan, G. C., 3157
Mori, H., 4625
Mori, S., 3508
Morinaga, T., 3003, 4241, 4260
Moritz, O., 1237
Moriya, A., 4491
Morley, F. H. W., 3088
Morozov, P. V., 2759
Morris, R., 2350
Morrison, J. H., 3760
Morrison, J. W., 1576, 3632
Morrison, K. J., 1506
Morrow, J. W., 2604
Mortimer, R. K., 3640
Morton, J. K., 1206
Moscoso, C. G., 4654
Moseman, J. G., 498, 4224
Moser, H., 3684
Moškin, V. A., 3295
Moskov, I. V., 2572
Moşneăga, V., 1618
Mosolova, A. V., 920, 923
Mota, M., 2457
Mothes, K., 4140
Mou, T.-S., 3167
Moule, C., 1593
Mounat, A., 3260
Moura, J. A. P., 4093
Mousseau, J., 2987
Moutschen-Dahmen, J., 4219
Moutschen-Dahmen, M., 4219
Mudra, A., 3559
Muhammad, 'A. H., 2940
Muhanova, Ju. J., 3506
Muhin, N. D., 2637
Muir, C. E., 264
Mukade, K., 1488, 4034
Mukai, T., 295, 1522, 2334
Mukaiyama, S., 3117
Mukherjee, S. K., 1916
Mullaly, J. V., 2777
Müller, A. von., 3244, 4498
Muller, C. H., 4740, 4742
Müller, G. F. W., 883
Müller, H., 2067
Müller, H. J., 1030
Müller, H. W., 452
Müller, K.-H., 3, 226
Müller, K. O., 212
Müller, N., 3444
Mulvey, R. R., 1353
Mumaw, C. R., 4880
Mumjieva, E., 4503
Mündler, M., 1796
Mundry, K.-W., 1164
Munekata, H., 2977–8
Munkres, K., 1406
Munro, J. M., 3179, 3199
Munshi, Z. A., 2988
Münster, J., 4389
Müntzing, A., 370, 1602, 2416, 2453
Murakami, T., 3012
Muramatsu, M., 1489, 3869
Muraoka, Y., 797, 1992–3, 2002, 4533
Murawski, H., 872, 2102
Murayama, H., 3582
Murayama, T., 1059
Murphy, H. C., 1330
Murphy, R. P., 1344
Murray, B. E., 2704
Murray, C. B., 2469
Murray, H. C., 1553
Murtazov, T., 3503
Murthy, K. S., 4430
Murthy, V. V. Suryanarayana, *see* Suryanarayana Murthy, V. V.
Murty, B. R., 793, 1989, 3253, 3914
Murty, G. S., 2947
Musahib-ud-Din, 3067
Musatova, V. I., 606
Musijko, A. S., 1619, 2920
Musser, H. B., 1359
Muszyńska, K., 1464
Mutsuura, O., 3267
Myhre, D., 1669

Nagai, T., 4056
Nagao, S., 1694–5
Nagasawa, T., 3542
Nagatomo, T., 2936
Nageswara Rao, P., 3190, 4432
Nagy Tóth, F., 4610
Naim, M. S., 3211
Nair, K. R., 1117
Nair, Padmanabhan Narayanan, *see* Padmanabhan Narayanan Nair
Naithani, S. P., 3366, 4652
Nakagawa, H., 3470–1, 4836
Nakagawa, K., 1466
Nakagawa, M., 313, 322, 1543–5, 1657
Nakahara, K., 2583
Nakahira, K., 3226
Nakai, S., 1198
Nakajima, G., 272–3, 275, 1484–6, 4040
Nakamura, H., 2034
Nakamura, K., 2509
Nakamura, M., 2036
Nakamura, N., 1622
Nakao, S., 3581, 3587, 3596–9
Nakayama, K., 1844
Nakayama, T., 3547
Nanda, K. K., 248–9
Nanjundayya, C., 729, 3207, 3210
Nannenga, E. T., 2431

Nanney, D. L., 1074
Narahari, P., 524
Nargunam, W. R., 1722
Narise, T., 3889
Narvaez, I., 1441
Nash, A. S., 2014
Natali, A. H., 2988
Natarajan, A. T., 251, 293–4
Nath, J., 3048
Natti, J. J., 4801
Naundorf, G., 816
Navašin, M. S., 2582, 3739
Navkal, H., 3206–7
Nawaz, S. M., 3208
Nayar, T. G., 2653
Naylor, B., 3061
Naylor, J. M., 3622, 3754
Nazarov, S. A., 4820
Nazarov, S. P., 1014
Neal, N. P., 2933
Neary, G. J., 3757, 3762
Nečas, J., 689–90
Nečiporenko, N. A., 2753
Neelakantan, L., 2658
Negi, L. S., 837, 849, 1859, 1869, 3196, 4436
Negovskij, N. A., 1930, 1966
Negreanu, E., 2234
Negrobova, F. I., 3284
Negroul, A., *see* Negrul', A. M.
Negrul', A. M., 2221, 4707
Nei, M., 2499
Neky, E., 1448
Nelson, N. J., 1392, 2508
Nelson, O. E., 447, 1369, 1568, 1627, 4186
Nelson, R. R., 167, 2952
Németh, M., 4699
Nesterov, Ja. S., 2098
Nettevič, E. D., 4118
Nettles, V. F., 162
Neubert, A. M., 2152
Neugebauer, W., 2252
Neve, R. A., 821, 4554
Nevinnyh, V. A., 1891, 4482
Nevstrueva, P. I., 4555
Newman, J. E., 1353
Newman, J. S., 1866
Newton, W., 4695
Neye, W., 4945
Nezu, M., 346
Nicholson, G. E., 4458
Nickeson, R. L., 3496
Nicolaisen, N., 3529
Nicolle, P. E. N., 419
Niederhauser, J. S., 655, 4196, 4202
Nienstaedt, H., 1239
Nietsch, H., 114
Nieuwhof, M., 3469, 4806
Nikiforov, I. L., 4476
Nikolov, H., 2764
Nilan, R. A., 202, 489, 1399, 2969
Nilca, V., 2309
Nilsson, B., 951, 3414
Nirmal Singh, *see* Nirmal Singh Maini
Nirmal Singh Maini, 837, 3287
Nishi, Y., 4786
Nishikawa, N., 3304, 3556
Nishimura, S., 2289, 3586
Nishimura, Y., 2467
Nishiwaki, Y., 2468
Nishiyama, I., 2477, 2483, 2887, 3249
Nishizawa, T., 4266, 4786
Nitzsche, M., 783
Nixon, K., 4576
Nobs, M. A., 142, 3948
Noda, A., 3007
Norden, A. J., 1331
Nordenskiöld, H., 1202, 1743
Norman, A. G., 2421
Noronha-Wagner, M., 1482
North, C., 4583, 4587–8
Northrop, J. H., 1151–2, 3710
Nose, Z., 3122
Notani, N. K., 2943
Nour, M. A., 215
Nover, I., 1465
Novick, A., 42
Novotny, H. M., 964
Nowiński, M., 841
Nuffer, M. G., 1332, 1625
Nunes, W. de O., 623
Nutman, P. S., 607–8
Nutter, G. C., 1361
Nuttonson, M. Y., 2899, 2974
Nyárády, A., 1742
Nybom, N., 877, 2080, 4614
Nygren, A., 1217, 1741
Nylund, R. E., 1819, 3148

Oberdorf, F., 452
Oberle, G. D., 3357
Obregon, F., 4177
Obrejanu, Gr., 4333
Ochoa, S., 1074
Ockey, C. H., 8, 3769
Oelke, J., 3458
Ogaki, C., 3345
Ogawa, Y., 3880
Ogg, J. E., 1214, 3700
Oguma, Y., 3138
Ogur, M., 1065
Ogura, T., 523
Ohashi, M., 4913
Ohlrogge, A. J., 447
Ohori, K., 797, 4533
Ohta, *see* Ota
Oka, H., 528, 1696–8, 1708–9, 1716, 1719, 2500, 3870–2, 2883–4, 3890–1, 4242, 4257
Oka, H. I., *see* Oka, H.
Oka, M., 1992–3, 2002
Okamoto, M., 269–70, 2481, 4051
Okamura, T., 1799, 3122
Okanenko, A. S., 1960
O'Keefe, R., 658
Oknina, E. Z., 2714
Oksijuk, P. F., 2591, 4062
Oktaba, W., 3606, 4016
Ólafur Jónsson, 3859
Oldemeyer, R. K., 1953
Oldén, E. J., 2081
Olien, C. R., 1556
Olive, L. S., 3758
Oliveira, A. B. de, 2210
Oliver, E. F., 2330
Olmo, H. P., 3318–9, 4698
Olsen, J., 2644
Olsson, G., 4563
Olteanu, G., 4503
Oniščenko, A. I., 3126
Ono, H., 1522
Ono, T., 3600
Oort, A. J. P., 216
Oparin, A. I., 2567, 3563, 3736
Oppenheimer, C., *see* Openhimer, H.
Oppenheimer, H. R., *see* Openhimer, H. R.
Openhimer, H., 873, 4659
Openhimer, H. R., 1510, 2761
Oppenoorth, W. F. F., 4206, 4916
Opsahl, B., 1125, 1800, 4369
Orchard, W. R., 3387
Orel, L. I., 688, 1021
Orellana, R. C., 817
Orjuela N., J., 2807
Orlido, N. M., 2009
Orlov, V. A., 1597
Orlov, V. T., 1892
Orlovskij, N. I., 780, 1939, 1955, 1958, 4501, 4513
Orr-Ewing, A. L., 2297, 3441–2
Ortega C., J., 2859
Ortiz R., G., 3257
Osadčij, V. P., 2922
Osawa, S., 1074
Osborne, T. S., 1333, 3030, 3969
Osbourne, R., 59
Oskarsson, O., 3423
Osler, R. D., 1334, 2935, 4174, 4177–8
Os'makov, I. G., 626
Ostapenko, B. F., 2294
Östergren, G., 1748
Oswalt, R. M., 486
Ôta, T., 2578
Ota, Y., 2236
Otey, G., 2180, 4907
Ouang, *see* Wang
Ouellet, C. E., 2705
Ounsworth, L. F., 179
Overlaet, J., 4094
Owen, C. R., 1335
Owen, H., 2734
Owens, H. S., 1976
Oyama, T., 1203
Oyanguren, J. de, 2994
Ozol, A. M., 4078

Paardekooper, E. C., 2059–60
Padilla A., R., 4330
Padmanabhan Nambisan, K. M., 2657
Padmanabhan Narayanan Nair, 743
Pahl, H. B., 1074
Pahomova, M. G., 4661
Painter, R. H., 515, 4331
Painter, R. B., 2575
Pal, B. P., 199, 281, 1503, 2492, 3837, 3907, 3928
Pál, Gy, 4511
Pal, S., 909
Palacios, G., 2935, 4174, 4178
Palamarčuk, A. S., 4338
Paliwal, R. L., 1391, 3065
Pammer, F., 115
Pandele, I., 2082
Pandey, K. K., 2592, 3096, 3643
Pandey, S., 2171
Pandya, P. S., 1883, 3201, 4429
Panella, A., 4314
Panje, R. R., 3916
Panos, D. A., 1274, 4308
Panse, V. G., 3920
Pantelić, M. B., 3331
Panzera, C., 932
Pao, W.-K., 1483
Papavizas, G. C., 4095
Papp, Zs., 2613, 4017, 4046
Paradiev, A., 4328
Paramonov, A. A., 61
Paris, M. R., 4577
París, R., 2807
Parish, D. H., 757
Parker, J. H., 471
Parkey, W., 843
Parkin, A., 1225

Parks, L. W., 2409
Parks, N. M., 648
Parmentier, G., 243, 2732
Parmer, M. U., 3186
Parsons, P. A., 24, 1146, 3734, 4156
Partridge, C. W. H., 1392, 2508
Pass, H., 2932
Pastor Cosculluela, F., 1840
Pásztor, K., 4193
Pate, J. B., 4483
Patel, C. T., 3186, 3200, 4440
Patel, G. I., 3221, 4698
Pateman, J. A., 9–10, 3286, 3305, 3649, 3651, 3694
Paterson, D. R., 165
Patil, A. K., 972
Patil, J. A., 506, 972, 2395
Paton, M. J., 2518
Patterson, F. L., 345, 499, 1560, 2793, 2832, 2834, 4071–2, 4082
Paul, G. I., 20
Paul, H., 1923
Pavlenkov, V. S., 1774
Pavlov, K., 3867
Pavlov, I. F., 4109
Pawar, M. S., 524
Pazonyi, B., 2624
Pazourková, Z., 4790
Peacock, H. A., 619, 3114
Peak, J. W., 3088
Peake, R. W., 556
Pearson, F. B., 262
Peat, J. E., 3172
Pčelarov, V., 3134
Pech, W., 2304
Pedrini, E., 2085
Pei, S.-L., 4159
Peive, J., 3857
Pejve, Ja. V., *see* Peive, J.
Pelerents, C., 901
Pell, K. L., 307
Pelletier, R. L., 3474
Peloquin, S. J., 1814, 4377–8
Peña A., L., 2800
Pence, R. J., 911
Penčić, M., 2749
Pendleton, J. W., 4122
Pennisi, F., 2172
Pennock, W., 4678
Peregudov, N. I., 773
Perényi, M., 2277
Pérez, R., 2829
Pérez López, A., 4678
Pergament, E., 1354
Perlov, R. L., 2025
Perry, B. A., 2328
Perry, T. O., 1393, 1404, 4758, 4763
Persson, A. R., 2329
Persson, B., 4563
Persson, P.-J., 4123
Perucci, E., 1986
Pesek, J., 4321
Pesola, V. A., 4886
Péterfi, S., 4610
Peters, E. H., 3157
Peters, R., 3291
Petersen, B. B., 4769
Petersen, H.-J., 4869
Petersen, R. G., 1336, 4290
Peterson, C. E., 4827, 4832
Peterson, G. A., 1656
Peterson, J. L., 3499
Peterson, L. C., 659
Peterson, M. L., 1355, 3052
Peterson, P. A., 1394, 4557
Peterson, R., 876
Peterson, R. F., 2789, 2822, 4022
Petr, F. C., 1330
Petiet, J., 4794
Petit, R., 3231, 3242
Petrahilev, I. M., 3381
Petri, P. S., 3364
Petrov, D. F., 1185, 4172
Petrov, G., 2958
Petrov, I. A., 893
Petrov, P. M., 3214
Petrů, E., 4184
Pettersson, L. R., 214
Peturson, B., 1594
Peyer, E., 939
Pfahler, P. L., 2944, 4154
Pfau, C. J., 1140
Pfeffer, C., 1838
Pfeifer, R. P., 1315
Phadnis, B. A., 1884
Philipp, F., 2308, 4772–3
Philippe, J., 2182
Philipsen, P. J. J., 981
Phillips, L. L., 489, 1786, 4445
Phillips, R. W., 2993
Phinney, B. O., 2485
Pi, C. P., 2815
Piacco, R., 1711
Pichel, R., *see* Pichel, R. J.
Pichel, R. J., 861, 864
Pieringer, A. P., 1823
Pierson, C., 4233
Pilet, P.-E., 4057
Pilgrim, A. J., 2850
Pimahov, F. S., 1016
Pimentel, H., 2739
Pinnell, E. L., 1767
Pinčuk, T. D., 1971
Piquemal, M., 834
Pirie, N. W., 1183
Pirovano, A., 3340, 3393, 3965
Pirožnikov, K., 4147
Pisarev, V. E., 281, 1265, 2778, 2875, 4044
Pisek, A., 4618
Pissarev, *see* Pisarev
Pittman, D., *see* Pittman, D. D.
Pittman, D. D., 1065, 1395, 2452
Plaisted, R. L., 973, 3149
Plichet, F., 2164
Plock, H., 885
Plonka, F., 1896
Plotnikov, N. Ja., 183
Plough, H. H., 2518
Podhradszky, J., 4267
Podmogaeva, M. I., 994
Poehlman, J. M., 2884
Poenaru, I., 941
Pogorleckij, B. K., 1218
Pohjakallio, O., 1815
Pohlendt, G., 4032, 4065
Polevickij, K. A., 3854
Poliščuk, V. K., 329, 2771
Pollak, E., 2912
Polgár, S., 4252
Poljakov, I. M., 93
Pollard, E. C., 3645
Pollard, L. H., 4870
Pollhamer, E., 1654
Pollock, E. G., 3435
Polsinelli, M., 933, 2231, 3401, 3406, 4700–2
Poltarev, E. M., 1574
Polunin, Ja. Ja., 2387
Polunina, N. N., 4658
Pond, V., 200, 1377, 1400, 3696, 4930
Ponnaiya, B. W. X., 1278, 2650
Ponomarčuk, D. M., 606
Ponomarčuk, M. K., 1262
Ponomarenko, F. A., 1497
Pool, M., 4071–2
Poos, J. A. J., 4405
Pop, E., 4214
Pop, I., 3509
Pop, O., 4214
Popenoe, W., 910
Popov, A. V., 1929, 4513
Popov, G. I., 1635
Popov, M. D., 788
Popov, M. G., 3276
Popov, V. I., 3473
Popow, G., 328, 4047
Popović, L., 2749
Porojskaja, S. M., 2747
Porpaczy, A., 2075
Porte, W. S., 4842
Porter, K. B., 1337
Portères, R., 1706
Portsmouth, G. B., 2004
Posnette, A. F., 2142, 4550
Pospíšilová, J., 2323
Postel, W., 3986
Postigo, R., 2840, 4097
Postlethwait, S. N., 1627
Potapenko, Ja. I., 3400
Potapova, A. A., 1480
Potapova, N., 453
Potter, J. M. S., 3316
Potter, V. R., 1074
Pound, G. S., 983
Povilaitis, B., 3617, 3634
Powell, E. O., 2545, 3775
Powers, H. R., 321, 1540
Powers, L., 1945
Prasad, R., 3237
Prasada Rao, K. K., 4484
Pratt, C., 2697
Pravdine, L. F., 96
Preobraženskij, A. A., 943
Prevot, P., 859
Priadčenko, *see* Priadcencu
Priadcencu, A., 288, 4019
Price, C. D., 4113
Price, S., 766, 1912, 3236
Prien, H. G., 3993
Primo Yúfera, E., 3363
Princ, Ja. J., 3408
Priyavratha Rao, S. B., 1286
Probst, A. H., 3518
Procenko, N. G., 1854
Proctor, J. M., 220
Prokop'ev, M. P., 324
Pronk, F., 865, 2043
Proudfoot, K. G., 2603, 2605
Pruckov, F., 2648
Pruckova, M. G., 3982
Pruglo, A. V., 4145
Pruss, A. G., 2119
Prywer L., Cz., 4203
Pryor, L. D., 2281–3
Psarev, G. M., 1998
Pudovkina, Z., 711
Pugsley, A. T., 2823
Puia, I., 4223
Pulsifer, H. G., 748
Puransingh Sangwan, 1853
Pushkarnath, 3911
Puşkarev, *see* Puškarev
Puškarev, I., 1804
Puškarskij, S. D., 3647

Putt, E. D., 854
Putter, J., 4849
Puzikov, D. P., 1972

Quadling, C., 1158
Quairière, A. L., 3425
Quantz, L., 2391, 3510, 4897
Quesnel, V. C., 4551
Quinlivan, B. J., 612
Quinones, F. A., 3491

Raab, Q. J., 1338
Rabanová, L., 3613
Rabechault, H., 527
Rabinowitch, E. I., 1077
Racicot, H. N., 1426
Račinski, T., 1538
Radhakrishna Murty, B., *see* Murty, B. R.
Radler, F., 936
Radok, U., 1108
Rădulescu, C., 2135
Rădulescu, E., 1640
Rafols, W. de, 870
Ragazzi, G., 4840
Raghuvanshi, S. S., 3366, 4652
Rahn, E. M., 3283
Raina, P. N., 2558
Rajagopalan, D. S., 2655
Rajagopalan, K., 531, 2656, 4261
Rajaraman, S., 1874
Rajan, S. S., 836, 838
Rajháthy, T., 2625, 3630, 3632, 3999, 4182
Rajkai, P., 4067
Rajki, S., 4171
Rakitjanskij, V. K., 1941, 1974
Rakotomanana, 4259
Ramabhadran, G., 512, 4904
Ramachandran, K., 123, 719, 2652, 3191, 3193
Ramage, R. T., 502, 2886, 2963
Ramakrishnan, C. V., 3558
Raman, V. S., 127, 2659
Ramaswami, V., 3187, 3194
Ramiah, K., 3906
Ramírez, C., 2412
Ramírez E., R., 436
Randhawa, M. S., 4940
Ranganathan, B., 2452
Rangaswami, K., 3738
Ranga Swamy, N. S., 3361
Rao, A. N., 3456
Rao, B. S., 1863
Rao, C. J., 4430
Rao, J. T., 765
Rao, M. H., 2867
Rao, M. V., 2773, 4430
Rao, P. Nageswara, *see* Nageswara Rao, P.
Rao, U. N., 125
Rapin, J., 1981
Rasmussen, F., 1758, 4273
Rassel, A., 2174
Rasten, J., 1266
Rath, J., 4124, 4137, 4217
Ratnaswamy, M. C., 4226
Rattan Singh, 298
Rattray, A., 398, 404, 426, 431
Ravenscroft, C. S. I., 420
Rawlings, J. O., 1339
Rayappa Pillai, M., 1722
Razumov, V. J., 1472
Read, J., 2581
Reaga S., H., 2858
Rebischung, J., 541
Reeder, J. R., 1739, 3054
Rees, H., 369, 3061, 3763, 4135
Reese, G., 67
Reeves, J. T., 2881
Reggiani, F., 4815
Régnier, R., 3821
Reichgelt, T. J., 4325
Reid, D. A., 2979, 4224
Reid, J., 4821
Reid, R. D., 4585–6
Reimann-Philipp, R., 2046
Reinbergs, E., 496
Reissig, H., 3144
Reitz, L. P., 1527
Rejmak, W., 4016
Remeslo, V. N., 1496
Renard, G. K., 2095
Renier, A., 38, 3260
Resende, F., 2574, 3224
Resmeriță, I., 4333
Resnik, M. E., 892
Resovskij, N. V. T., *see* Timofeev-Resovskij, N. V.
Řetovský, R., 4184
Reut, Ja. A., 1005
Revilla, V. A., 3282
Reyes, G. M., 1720
Reyes N., R., 2808
Reynolds, J. D., 220, 4885
Reyntens, I. H., 4287
Rhodes, R. R., 3438
Rhyne, C. L., 718, 1340, 1346
Ribaldi, M., 4314
Rich, A., 1074, 2595
Richardson, J. M., 750
Richardson, R. W. (Jun.), 1019
Richharia, R. H., 1413, 3913
Richmond, T. R., 1890
Richter, A., 1396
Rick, C. M., 3495
Rico M., E., 2860
Riddell, J. A., 1514
Ridé, M., 2166–7, 4628
Riedl, W. A., 675
Rieger, R., 4929
Riegerowa, H., 1464, 1641
Rieman, G. H., 673
Riepma Wzn, P., 4884, 4898
Ries, S. K., 4832
Rifaat, O. M., 2535, 3660
Rigoni, V. A., 4671
Rigot, N., 4391, 4402
Riley, H. P., 2579
Riley, R., 280, 297, 3848
Rinke, E. H., 462
Rinne, U., 2730
Ris, H., 1074, 2458
Rivers, G. W., 1341
Rives, M., 2028
Rivett, A. D., 4015
Rizet, G., 3835
Rjabov, I. N., 4632
Robak, H., 954
Robb, O. J., 3449
Röbbelen, G., 53
Robert, A. L., 408, 1323, 2490
Roberts, B. J., 336
Roberts, C., 4924
Roberts, D. W. A., 344
Roberts, M. R., 2518
Robertson, M., 2184
Robin, M., 4076
Robinson, D. B., 3161, 4379, 4409
Robinson, D. W., 2606
Robinson, H. F., 1328, 2497, 2912, 3687, 4447
Robinson, P., 421, 425
Robles G., L., 2827
Robson, D. S., 1122–3
Rod, J., 3243
Rodionova, N. A., 1539
Rodnikov, N. P., 2345
Rodrigues, A., 4706
Rodríguez, A., 4196
Rodríguez, A. A., 1651–2
Rodríguez, R., 2811
Rodríguez Vallejo, J., 2852
Roemer, T., 1089, 3573
Roessler, E. B., 3612
Rogaš, A. R., 4465, 4470
Rogers, D. J., 3248
Rogers, H. H., 809–10
Rogers, W. S., 4589, 4592–3
Rohmeder, E., 955, 2269
Rojas M., E., 508, 2843, 4098–100
Rollen, A., 2316
Rolston, L. H., 4905
Roman, H., 1061, 3834
Roman, T., 1516
Romanova, M., 1802
Romberg, L. D., 2165
Romero L., M., 4025
Rommel, M., 235, 4007
Rondón, M., 2840
Roosen, P., 2273
Roper, J. A., 39
Rose, M., 2442
Rose, M. F., 3176, 3178
Rosen, G. von, 1165
Rosen, H. R., 2894, 4133
Rosenbaum, M., 28
Rosenthal, C., 778
Ross, J. G., 510, 2990, 3056
Ross, J. P., 3522
Ross, R. W., 641, 4377–8
Ross, W. M., 231
Rothacker, D., 680, 685, 701, 1832
Rothgeb, R. G., 4160
Rotini, O. T., 75
Rouillard, G., 4487
Roussel, N., 1979, 3245
Roux, J. B., 4451
Row, H. C., 1739
Rowatt, E., 3571
Rowlands, D. G., 3663, 4863
Rowley, D., 2540
Roy, N. N., 2947
Royan, S., 3553
Royo Iranzo, J., 3363
Ru, *see* Lu
Rubin, B. A., 2089, 4395
Rubin, V. A., 3322
Rubis, D. D., 1342
Rudkovskij, J. P., 2088
Rudnev, V. N., 4477
Rudolf, P. O., 963
Rudorf, W., 1089, 1245, 1247, 3512, 3573, 3809, 4347, 4399
Ruebenbauer, T., 1449
Ruebenbauer, Z., 4272
Ruiz Santaella, J., 105
Rundfeldt, H., 1251
Ruokola, A., 3550
Rupert, J., *see* Rupert, J. A.
Rupert, J. A., 2800, 2860
Rupert, C. S., 1074
Rusmini, B., 2744–5
Russell, W. A., 1343, 2504, 4617
Ruston, D. F., 3169

Ruszkowski, M., 1512–3, 1521, 1586
Ruyssen, B., 835
Ryan, A., 3674
Ryan, C. A. (Jun.), 1666
Ryan, F. J., 2510
Rybakova, V. D., 2301
Ryndin, N. V., 117
Ryžov, S. N., 1846, 3184
Rzegocińska, L., 1783

Šabanov, D. S., 1996
Sachs, R. M., 73
Sadanaga, K., 271
Sagalovič, E. N., 997
Sagawa, Y., 3970
Sahai, J. M., 4899
Sahasrabudhe, V. B., 4426
Sahlström, H., 2203, 4689
Saini, A. D., 726
St. Clair, J., 3699
St. Lawrence, P., 1074
Saito, H., 2569, 3650
Saito, K., 995, 2337
Saito, T., 999, 2344, 3488, 4831
Sakai, H., 3012
Sakai, K., 239, 530, 2447, 2501, 3417, 3881–2, 3887–91, 4532
Sakai, K.-L., *see* Sakai, K.
Sakamoto, S., 347, 2476, 3075, 3592, 3869, 3878
Sakata, K., 4881
Sakazaki, N., 747
Šalaev, M. S., 2638
Sălăgeanu, N., 236
Salanki, M. S., 3303, 3535
Šalavik, A. I., 3334
Salazar T., J., 2852
Sal'nikov, V. R., 2876
Salonen, A., 1815
Salzmann, R., 120
Samarin, P. I., 2305
Samborski, D. J., 2853
Sampath, S., 522
Sampford, M. R., 4285
Sampson, D. R., 1584, 2327, 2593
Sams, J., 3712
Samsonov, M. M., 305
Samsonova, I. A., 2348
Samuels, G., 1926
Sánchez A., J. L., 2369
Sánchez-Monge, E., 104, 274
Sand, S. A., 3254, 4526
Sandal, P. C., 4353
Sandar, N., 662
Sandhu, A. S., 1536, 2780
Sandhu, R. S., 2873
Sando, W. J., 321
Săndulescu, R., 4523
Sangiorgi, A. V., 3460
Santa María, J., 3555, 4922
Santhanam, V., 124, 1850, 1858, 1882, 2655, 2658, 3192–3, 4428, 4443
Santhanamswamy, V., *see* Santhanam, V.
Santiago, J. C., 4107
Santos, I. S., 384, 4170
Santosh Kumar Sarkar, *see* Sarkar, S. K.
Sanyal, P., 4481
Sanz de Cortázar, C., 1196
Sapin, P., 4874
Šapkin, Ju. D., 2235
Šarašenidze, D. S., 3343
Sardi, F., 4696
Sarič, *see* Sarić
Sarić, M., *see* Sarič, M. R.
Sarić, M. R., 301, 2749, 2897, 4142
Sarkar, P., 3623, 4303
Sarkar, S. K., 84, 2175–6
Sarkisjan, N. S., 300
Šarma, *see* Sharma
Sarvas, R., 949
Sass, J. E., 2937
Sasser, N. C., 3037
Sastry, S. K., 767
Sato, H., 491
Sato, I., 3470–1
Sato, S., 1209
Satokawa, O., 1701–4
Sauer, J., 3581
Saunders, J. H., 3177
Saunoris, J., 1760, 3086–7
Savel'eva, O. N., 4395
Savian, A., 2230
Savitsky, H., 1944
Savov, P., 3202
Săvulescu, T., 4944
Savvičev, K. I., 1788
Sawamura, S., 72
Sax, K., 48
Sazanov, V. I., 4298
Scaramella-Petri, P., 3460
Scaramuzzi, F., 3347
Scarascia, G. T., 3259, 3265, 4531
Ščegolev, V. N., 3854
Ščepot'evi, F. L., 3324
Ščerbak, S. N., 1181
Schaal, L. A., 640, 692
Schaeffer, P., 29–31
Schafer, J. F., 345, 1431, 1560, 2785, 2793, 2832, 2834, 4082
Schafter, *see* Schafer
Schagen, R., 4826
Schaller, C. W., 2983
Schander, H., 1231, 3333, 4622
Schark, A. E., 635–6, 3143
Schechaj, R., 1806
Schechtner, G., 1725
Schecroun, J., 3673
Scheffé, H., 1095
Scheibe, A., 3811, 4348
Schertz, K. F., 1344
Schery, R. W., 1360
Scheuerpflug, G., 1765
Schexnayder, C. A., 772
Schicchi, S., 4312
Schick, E., 2046, 3154, 4403
Schick, R., 1837, 3154, 4374, 4403
Schiehll, J., 2841
Schiemann, E., 1509
Schipper, M. A. A., 958
Schlehuber, A. M., 352, 486, 2740, 2804
Schlösser, L.-A., 1980
Schmalz, H., 1534, 2770
Schmeil, O., 3566
Schmelzer, K., 3509, 3264
Schmidt, J. W., 2796
Schmidt, W., 1233
Schmiedeknecht, M., 4329
Schmitt, R., 2265, 4725
Schmitthenner, A. F., 1043
Schmucker, T., 2253
Schneider, C. L., 4518
Schneider, J. H., 784, 1074
Schnell, F. W., 1252, 2902
Schnell, J., 1114
Schober, K., 3807
Scholz, F., 1653
Schönbach, H., 2254
Schooler, A. B., 489, 1663
Schopmeyer, C. S., 1240
Schreiber, F., 3815
Schreiber, K., 705, 1834
Schreiber, R. W., 78
Schreiner, E. J., 2286
Schreiner, W., 3151
Schröck, O., 2255, 2292, 4747
Schroeder, H. W., 1542
Schroeder, W. T., 3500
Schüller, F., 2616
Schulman, H. M., 1136
Schultz, E. S., 4381
Schulze, T., 1057
Schulz-Schaeffer, J., 4276
Schuphan, W., 3986, 4807
Schuster, G., 4539
Schütt, P., 2256, 4762
Schvester, D., 1905
Schwanitz, F., 1091, 1230, 2538
Schwartz, D., 787, 2469, 3752, 4191
Schwarze, P., 1787
Schwarze, R., 4347
Schweiger, W., 1837
Schwemmle, J., 1219, 3780–1
Schwinghamer, E. A., 2824
Schwob, R., 99
Scott, D. H., 917, 919, 924
Scott, G. M., 311
Scott, L. E., 710, 3168
Sears, E. R., 184, 2481, 2766, 2817, 4053
Sears, R. D., 4538
Seaton, R. D., 572
Seay, W. A., 4334
Sebök, C. M., 1477
Sečkarev, B. I., 971
Sedlmayr, K., 1650, 2622
Sedov, E. N., 2107
Sedova, K. A., 4050
Seeborg, E. F., 307–8
Seehofer, F., 798
Seetharaman, R., 2998
Segeťa, V., 4010, 4059
Séguéla, J. M., 4020
Sehgal, S. L., 1859
Seidel, E., 2066
Seif, R. D., 3517
Seitz, F. W., 2257, 2266
Seitzer, J., 3603
Sekiya, K., 3489
Sekizuka, S., 3117
Seleznev, N. N., 1491
Self, F. W., 157, 1864
Selim, A. K., 4086
Sellschop, J., 422
Semenov, N. I., 2138
Semerinova, A. G., 4825
Sempolovskij, L. D., 4502
Sen, B., 393
Sen, J. L., 1713, 3002
Sen, S., 315
Senčenko, G. I., 744, 1891
Sengbusch, R. v., 929, 1228
Sennayan, P., 1858
Šer, B. L., 2638
Sergeeva, R., 4718
Sermonti, G., 70, 2407
Serra, J. A., 3746
Seshadri Ayyangar, G., 1879, 4432
Seshadri, C. R., 844
Seshadri, V. S., 2653
Seshu, D. V., 522
Šestakov, V. E., 1597
Seth, J., 4327
Sethi, A. S., 3285

Sethi, B. L., 728, 1849
Setlow, R. B., 3638
Ševčuk, T. N., 210, 1532, 3217
Ševeluha, V. S., 2965
Sevost'janov, S. P., 1932, 1941, 1962
Shaeffer, S. G., 1991
Shafi, M., 3005, 4239
Shah, S. S., 1900
Shakudo, K., 529
Shands, H. L., 356
Shands, R. G., 499
Shang, K. C., 2475
Shankel, D. M., 3698
Shanmughasundaram, A., 1722
Shapiro, H. S., 1136
Shapiro, S., 201, 2693, 3970
Sharma, A., 63, 68, 1194
Sharma, A. K., 63, 68, 84, 978, 1194, 1662, 3360, 3548, 3750, 3770–1
Sharma, S. L., 3237
Sharma, S. N., 1526
Sharman, B. C., 4029
Sharpe, H. S., 3677
Sharpe, R. H., 889
Shaw, G. W., 3744
Shaw, M., 2853
Shaw, R. H., 2153
Shay, J. R., 4623
Sheikh, Y. N., 2395
Shekleton, M. C., 357
Shellenberger, J. A., 4073
Shen, T. H., 2738
Shendge, P. Y., 3908
Shepherd, A., 4517
Shepherd, F. W., 4810
Shepherd, K., 2205
Sheppard, P. M., 4932
Sherratt, H. S. A., 2555
Sherwood, R. T., 610
Shibata, K., 565, 2320–1, 4805
Shibutani, S., 1799, 3122
Shibuya, R., 2418
Shifriss, O., 1397
Shimizu, S., 3514–5
Shimotsuma, M., 346
Shimoyama, K., 4525
Shimura, T., 2478
Shingenaga, M., 2459
Shiojiri, I., 4242
Shiomi, T., 2985, 4270
Shiratori, K., 4264
Shisodia, V. N. S., 317
Shogren, M., 4073
Shooter, K. V., 1074
Shoup, N. H., 307
Shug, A. L., 1135
Shui, Y.-T., 250
Shult, E. E., 1132, 2536, 2571
Sibbitt, L. D., 311–2, 2776
Sibilia, C., 2848
Sidorov, F. F., 389, 443, 2923
Sierra, J. A., *see* Sierra F., J. A.
Sierra F., J. A., 479, 2860–1
Šihov, L. I., 4850
Sikka, S. M., 199, 470, 724, 836, 1502, 1776, 2492, 2773, 3910
Silber, A., 4140
Silberschmidt, K., 4420
Sill, W. H. (Jun.), 1425, 1428, 4110
Silva, A. R. da, 2788
Silva, J. B. Vieira da, 397, 409
Silva, J. G. da, 3272
Simak, M., 2440
Šimanskij, N. K., 3302
Simard, J., 3474
Simmonds, N. W., 2206
Simon, J., 4268
Simon, M., 3245
Simon, U., 292
Simonguljan, N. G., 1868
Simons, M. D., 1442, 2891–2
Simpson, G., *see* Simpson, G. W.
Simpson, G. W., 653–4
Sims, H. J., 2777, 2885
Simulescu-Saru, N., 1946
Simura, *see* Shimura
Sinel'ščikov, R. G., 4644
Singer, B. A., 1074
Singh, D., 2430, 3288, 4899
Singh, Dharampal, *see* Dharampal Sing
Singh, D. N., 3288
Singh, H., 3923
Singh, H. G., 2772
Singh, H. N., 1921
Singh, Joginder, *see* Joginder Singh
Singh, L. B., 3604
Singh, M. P., 4823
Singh, R., 2430
Singh, R. N., 3604
Singleton, W. R., 1345, 1353, 1398, 2422, 2972, 2975
Sinisali, J., 2730
Sinjakova, L. A., 2355
Sinsheimer, R. L., 2528
Sinskaja, E. N., 1218, 3787
Sinskaya, *see* Sinskaja
Šipilova, I. I., 92
Sircar, S. M., 3926
Sire, M. W., 1399
Sirks, M. J., 2543
Sistrunk, W. A., 4692
Šitov, V. V., 3142
Sitte, P., 209
Sítař, J., 3963
Sivak, V. P., 699
Sivev, S., 3310
Sívori, E. M., 4058
Sizov, I., *see* Sizov, I. A.
Sizov, I. A., 1090, 2630, 3215, 3852–3, 4464
Sjøseth, H., 1420
Sjuj, Ju.-T., *see* Shui, Y.-T.
Skaare, S., 3125
Skinner, J. C., 4489
Skoropad, W. P., 501
Skrabka, H., 1585
Skripčinskij, V. V., 1182
Skurat, D. F., 4555
Skvorcov, S. N., 284
Slabaugh, P. E., 963
Słaboński, A., 1641
Slabyhoudek, K., 2013
Slater, C. A., 2015
Sleesman, J. P., 663
Šlimovič, B. M., 2782
Slomnicki, I., 4849
Smeets, L., 2143
Smeltzer, D. G., 4231
Smertkin, V. D., 2342
Smirnov, A. N., 229
Smirnov, E. S., 3720
Smirnov, M. N., 626
Smith, C. E. M., 3230
Smith, C. S., 2824
Smith, D., 4326
Smith, D. C., 542
Smith, D. L., 4202
Smith, F. H., 1346
Smith, H. F., 1110
Smith, H. H., 2691, 3254, 3973
Smith, J. H. C., 3947
Smith, T. J., 3045
Smith, K. M., 3572
Smith, O. F., 603, 3092
Smith, P. B., 782
Smith, P. E., 1043
Smith, P. G., 3279–80
Smith, R., 3174
Smith, R. S., 214
Smith, T. E., 1780
Smith-Keary, P. F., 3692
Smoot, J. J., 4406
Smyslov, B. V., 1418
Smyth, J. V., 106
Smyth, W. G., 106
Sneath, P. H. A., 1223
Sneep, J., 3477–8, 4777, 4813
Snoad, B., 3564
Snyder, E. B., 4761
Snyder, L. A., 2815
Snyder, L. H., 3560
Sobol', S. L., 61
Sobti, S. N., 3309
Socías, A., 2412
Søegaard, B., 4769
Sofinskaja, V. J., 1894
Sokolov, S. Ja., 3320
Sokolova, E. P., 4609
Solomon, S., 3535
Solov'ev, B. F., 586
Soltanovskaja, G. A., 2363
Somayajulu, P. L. N., 315
Somego, M., 2288
Somorjai, F., 4176
Somos, A., 3820
Soost, R. K., 3492, 3495, 4656
Sorensen, E. L., 4331
Sorge, P., 4688
Soria V., J., 1612
Sornay, A. de, 756, 4486
Sorokina, O. N., 1517
Sosa, O. N., 2839, 2851
Sosna, M., 4218
Soudek, D., 3742
Soundy, M., 221
Spangelo, L. P. S., 2099
Sparrow, A. H., 200, 1377, 1400, 2696, 3696, 4930
Sparrow, D. H. B., 1674
Sparrow, R. C., 1400
Spasoff, L., 4538
Speckmann, G. J., 1949
Spector, W. S., 1088
Speed, D. W., 3790
Spence, J.-A., 3241
Spence, J. R., 3182
Spencer, J. A., 2894
Spencer, J. L., 868
Spiegelman, S., 1074
Spina, P., 2169, 2172
Sprague, G. F., 2427, 2504
Sprecher, E., 4578
Sprent, J. I., 1047
Sprott, D. A., 1107
Srayankumaran, 1722
Srb, A. M., 1167, 1401, 3839, 4918
Šreder, A. G., 3370
Sreeramulu, C., 4229
Staby, J. H., 4198
Stafford, T. J., 762
Stakman, E. C., 1422, 2713, 2835–6
Stall, R. E., 4852
Stanford, E. H., 4343
Stankiewicz, Z., 1003
Stapledon, R. G., 550

Starr, M. P., 2368
Starzycki, S., 1479
Staševskaja, Ju. A., 3252
Staudt, G., 296
Stauffer, J. F., 1645–6
Stead, B., 396, 413
Stebbins, G. L., 186, 2482, 2561, 2563, 3904–5
Steel, R., 1153–4, 2403–4
Steffen, K., 2597
Steffensen, D., 1204
Stehlé, H., 760, 1907–9, 1917, 1924, 3231, 3242, 4493, 4925
Stein, W., 1063
Steineck, O., 686
Steinitz-Sears, L. M., 2766
Stelfox, H. B., 554
Stelter, H., 1832
Stent, G. S., 1074, 2511, 3704
Stepanov, P. A., 2192
Stephen, R. C., 3263
Stephens, S. G., 737–8
Stephens, T. S., 4872
Steppler, H. A., 1773
Sterling, J. D. E., 1680, 3937
Stern, C., 1119
Stern, H., 3625, 3765
Stern, K., 1147, 2258, 3689
Stevenson, E. C., 1385
Stevenson, F. J., 674
Stevenson, G. C., 764, 1906, 2228
Stewart, D., 4518
Stewart, D. M., 336, 2835–6
Steyn, P. A. L., 4647
Stich, H. F., 3754
Stinson, H. T. (Jun.), 455–6
Stoa, T. E., 290, 354
Stocker, B. A. D., 1158
Stockmans, F., 935
Stoilov, M., 4011
Stokes, I. E., 4495
Stoletov, V. N., 51
Stolle, G., 887
Storey, H. H., 2954
Storgaard, A. K., 1761
Stover, R. H., 1443
Strand, E., 2727
Strand, L., 2270, 2446
Straub, J., 2594
Strauss, B. S., 2512, 3667
Streisinger, G., 3950
Strickland, W. N., 3655, 3729
Strigoli, P., 3364, 3460
Stringfield, G. H., 4188
Strodov, V. F., 687
Strogonov, B. P., 1419
Strommen, A. M., 2933
Stroun, M., 2742, 3844, 4057
Strucovskaja, E. S., 2782
Stubbe, H., 2349, 2521, 2684, 3803, 3984, 3987
Stubbe, W., 36, 3836
Stuckey, I. H., 3047
Sturdy, M., 2072–3
Sturiale, F., 4655
Sturla Fridriksson, 4274
Stutz, H. C., 1599
Subba-Rao, N. S., 536
Subbiah Mudaliar, V. T., 1084
Subramaniam, A., 1278, 2650
Subramanyam, K., 2649
Südi, J., 4267
Suemoto, H., 1522
Sueoka, N., 295, 1522
Sugawara, T., 4788
Sugimura, A., 2463
Suhov, K. S., 217, 2513
Sukačev, V. P., 1934, 1969
Sukanya Bai, K. M. V., 2656
Sukhov, *see* Suhov
Šul'ga, P. M., 2380
Šulyndin, A. E., *see* Šulyndin, A. F.
Šulyndin, A. F., 1480–1, 1574
Summers, T. E., 4483
Sun, C.-C., 1493
Sun, F.-C., 769
Sun, S.-C., 1493
Sun, V. G., *see* Sun, F.-C.
Sundaram, N. V., 2654
Sundaram, V., 3210
Sundararaj, J. S., 2653, 2657
Sunderman, D. W., 2807, 2820, 2825
Sundra Rachavan, R., 866
Suneson, C. A., 355, 502, 2886, 2963
Sung, C.-H., 1691
Surguladze, Š. M., 2155
Suryanarayana Murthy, V. V., 524
Suryanarayanan, S., 536
Suščevskij, M. G., 2629
Šuškin, A. A., 1895
Suskind, S. R., 1074, 1150
Suspiro, E., 2220
Sutie, D., 4628
Sutô, T., 2486, 3601
Suyama, Y., 1402, 1406
Suzki, A., 4873
Suzuka, O., 2049–51, 3590
Suzuki, H., 3600
Suzuki, I., 2196
Suzuki, Y., 1048
Sváb, J., 1113–4, 1637, 2599, 2611, 2615, 3607
Svensson, V., 4783
Svinarev, V. I., 4004
Swaebly, M. A., 2855
Swales, T., 4685
Swaminathan, M. S., 251, 724, 793, 1776, 1900, 1989, 3048, 3050, 3253, 3918, 4823, 4915
Swanson, C. P., 83
Świniarski, E., 1835
Syakudo, *see* Shakudo
Symonds, N., 3703
Syrach Larsen, C., 4757
Syskova, M. V., 1002
Sytina, Z. A., 694
Szabó, G., 3718
Szalai, I., 1816
Szmidt, O., 2371
Szőke, S., 4067
Szybalski, W., 1197, 3707
Szymusik-Kumelowska, I., 1817

Tabidze, D. I., 3391
Tabushi, J., 4036–7
Tachibana, Y., 747
Tahtadžjan, A. L., 1180
Tai, K., 1717
Takahashi, K., 3012
Takahashi, M., 1694–5, 4238
Takahashi, M.-E., *see* Takahashi, M.
Takahashi, N., 4253
Takahashi, R., 2502, 2972, 4221
Takahashi, T., 1676, 3650
Takahashi, Y., 1718
Takahasi, *see* Takahashi
Takase, N., 697, 1825, 1828
Takatori, S., 76
Takegami, S., 1541, 2784
Takemaru, T., 90–1
Takenaka, Y., 794–5, 3874
Takeshi, Y., 2487
Takezaki, M., 2034, 2036
Tamayo, A. Izquierdo, *see* Izquierdo Tamayo, A.
Tan, P.-A., 2084
Tanaka, H., 3753
Tanaka, J., 1017
Tanaka, M., 347, 795, 1715, 1987, 2334, 4037, 4117
Tanaka, N., 55, 520, 1170, 2463
Tanaka, T., 4250
Tanaka, Y., 2454
Tanami, Y., 1131, 2514
Tandler, C. J., 1192
Tang, S.-H., 1723
Tan Hong Tong, 2058, 2063
Tapley, W. T., 3500
Taran, A. V., 283
Taranova, E. A., 4621
Tarchetti, A., 4246
Taris, B., 3428, 4748
Taşcă, C., 236
Tatebe, T., 3457
Tateoka, T., 561–4, 590, 1734–6, 1753, 3075, 3592, 2873–4, 4305
Tavares, M. M. S. V. S., 4069
Taylor, J. C., 990, 2336
Taylor, J. H., 69, 1403, 3747, 3764
Taylor, N. L., 3039
Taylor, W. B., 1109
Taziri, T., 4271
Tedin, O., 2414
Teltscherová, L., 4013, 4059
Temkin, V. I., 2381
Templin, E., 2271
Tepora, J. N., 1710
Terada, M., 2519
Terami, H., 2211
Ter-Avanesjan, D. V., 1854
Terwilliger, D. E., 1155
Tétényi, P., 4668
Teterve, F. K., 2154, 4642
Texier, J., 2162
Theis, T., 2022, 2370
Thévenin, L., 2346
Thiele, I., 882
Thijn, G. A., 628
Thobbi, V. V., 856
Thoday, J. M., 3766
Thøgersen, O., 2646
Thomas, C. A. (Jun.), 1074, 1135
Thomas, H. R., 1033
Thomas, P. E. L., 428
Thomas, P. T., 2434, 2438
Thomas, W. I., 1054–5
Thombre, M. V., 4903
Thompson, A. E., 3540
Thompson, E. G., 1950
Thompson, F. C., 822–3
Thompson, J. B., 4135
Thomson, G. M., 753
Thomson, J. R., 572, 1745
Thorpe, H. C., 233, 2868
Thoukis, G., 4715
Thran, P., 4398
Threinen, J. T., 1444
Thuljaram Rao, J., 1093
Thung Tjiang Pek, 2062
Thurman, R. L., 1468
Thurston, J. M., 1589
Thyagarajan, T. R., 3554
Tihonov, N. P., 4611
Till, J. E., 3645
Timofeev-Resovskij, N. V., 3733

Timothy, D. H., 574
Ting, C.-Y., 2518
Ting, Y., 4247
Tinker, P. B. H., 2044
Tirumalacharya, D. K., 1284
Tohtuev, A. V., 497
Tokitsu, T., 1992–3
Toko, H. V., 1445
Tokuda, M., 1173
Tokumasu, S., 970, 4780, 4800
Tollenaar, D., 3275
Tolmach, L. J., 3641
Tomažič, G., 3310
Tomiyama, K., 693
Tomizawa, J., 3949
Tomo, N., 3270
Tong, T. H., *see* Tan Hong Tong
Toniolo, L., 4315
Tonkinson, S. M., 3757, 3762
Toohey, C. L., 3235
Topčijski, S., 3386
Torfason, W. E., 4615
Tormann, H., 2598
Torregroza C., M., 436
Torrey, J. G., 1199
Torrie, J. H., 546, 3059, 4875, 4879
Toul, V., 2323
Touvin, H., 4509
Tovmasjan, O. V., 1629
Townsend, G. F., 4920
Toxopeus, H. J., 1829, 4404, 4412
Toyama, S., 1903, 2027, 2288–9, 2291
Toyao, T., 4542
Traisenau, F. F. von, 3963
Tralau, H., *see* Tralau, H. W.
Tralau, H. W., 2272, 2293
Trautner, T. A., 3657
Travers, S. J., 4209
Trentin, A., 598, 1499, 4317
Treschow, C., 4768
Trifu, I., 1995
Trip, J., 1822
Trofimovskaja, A. Ja., 1458, 1677
Troll, H.-J., 3106–7, 3111, 4357
Troničková-Poláková, E., 4837
Trošin, D. M., 1176
Troutman, J. L., 800
Troyer, A. F., 1347
Trueba, D. J., 2216
Truel, P., 3397–8
Trulevič, V. K., 2307, 2636
Truscott, J. H. L., 3450–2
Tsai, C.-K., 2411
Tsai, K.-H., 2376
Tsan, W.-L., 1115
Tschermak-Seysenegg, E. von, 3963
Tschermak-Woess, E., 71
Tsu, C. C., 4882
Tsu, T.-M., 4856
Tsuchiya, T., 3513–5
Tsujita, M., 1137, 2515
Tsun, *see* Chung
Tsunekawa, K., 4271
Tsunoda, S., 2333
Tucakov, J., 2400
Tucker, J. M., 4740
Tul'ženkova, F. F., 2307, 2636
Tupicyn, D. I., 2136, 3351
Turbin, N. V., 3326
Turcotte, E. L., 2815
Turian, G., 3461
Turkovic, Z., 2222
Turks, L., 1878
Turner, B. L., 1784
Turner, E. M., 244
Tutin, T. G., 569
Tweney, C. F., 4936
Tydeman, H. M., 4595

Uchikawa, I., 1523–4, 2343
Uchino, F., 3753
Uchiyamada, H., 530
Udo, S., 2401–2, 4909
Udvaros, K., 2980
Uehara, T., 3531
Uemura, S., 4836
Ueno, M., 3099
Uetake, H., 3669
Ujihara, A., 1751
Ujihara, K., 4244
Ukolov, A. A., 252, 374
Ullman, W., 3103
Ullrich, J., 1830, 3159
Ullstrup, A. J., 469
Umaerus, V., 4380
Umali, D. N., 1710
Underwood, C., 3204
Unrau, A. M., 1819, 3148
Unrau, J., 263, 2480, 2810, 2821
Uppal, B. N., 3903
Upton, R. A., 222
Urano, K., 2486
Urban, S., 3847
Urbina Cevallos, J., 733
Ušakova, E. I., 2310
Ushiba, D., 2493
Ustimenko, S. P., 4512
Utiyamada, *see* Uchiyamada

Vacek, V., 1777
Vaheeduddin, S., 3536
Vakili, N. G., 1446
Vakulin, A. A., 4822
Valbuena, L. A., 2858
Valdeyron, G., 130
Valdivieso G., R., 1763
Valentine, F. A., 4192
Valle, E., 698
Valle, O., 2730
Vallega, J., 334, 1565, 1595, 2794, 2806, 2842
Vallejo, J. R., 2814
Vályi-Nagy, T., 3718
van Adrichem, M. C. J., 3387, 4695
van Arkel, G. A., 3701
Vanbelle, M., 2729
van Bennekom, J. L., 2311
van Buijtenen, J. P., 4744
van den Brande, K., 2204
van den Ende, G., 2274, 4746
van der Kroft, W. G., 4833
van der Laan, P. A., 4416
van der Plank, J. E., 4390
van der Veen, J. H., 1124, 1994
van Dobben, W. H., 1454
van Duyne, F. O., 1041
van Eijnatten, C. L. M., 4201
van Es, J., 4834
Vankoba Rao, M., 1879
van Kooten, A., 2385
Van Nostran, F. E., 2398
van Ooststroom, S. J., 4325
van Schaik, N. W., 446
van Schaik, P. H., 3518, 3520
van Schaik, T., 411
van Steenbergen, A., 1031, 4860
van Steenis, C. G. G. J., 1221
van Veldhuizen, H., 4204
van Vloten, H., 4739
Varenica, E. T., 1685, 3011
Varga, A., 1792
Varga (B.), M., 1045
Vargas Saco, R., 508, 3066, 3139
Vasil, I. K., 2576
Vasil'ev, A. F., 3251
Vasileva-Drjanovska, O. A., 2383
Vasudeva, R. S., 2866–7
Vaughn, J. R., 675
Vavilov, N. I., 3576
Vazir Hassan, M., 4664
Vear, K. C., 3575
Veatch, C., 478
Vecsey, T., 4194
Ved Pal Singh, 4359
Veenbaas, A., 4884
Veeraswamy, R., 126, 4865
Vega, G., 730
Vega, J., 944
Vehov, N. K., 3323
Veiguinha, A. S., 461
Velea, C., 4333
Velican, V., 4214
Venclavovič, F. S., 2041
Vendrely, C., 3778
Venkatachary, B., 4432
Venkata Ram, C. S., 4462
Venkataraman, K., 126
Vent, L., 2017
Verman, U. P., 2171
Verner, L., 4645
Veronesi, U., 81
Verteuil, L. L. de, 819
Vervack, W., 2729
Vestergaard, W., 2722
Vettel, F., 2775
Veyret, Y., 1686, 4227
Vidaković, M., 3436
Vidal, P., 852
Videnov, B., 4638
Vigh, L., 2621
Vigorov, L. I., 1459
Vijayvargiya, B. L., 3533
Vik, J., 2329
Vilkova-Malyševa, A. G., 2091
Villanueva N., R., 4025
Villax, E. J., 4114
Vincent, G., 1241
Vincent, J. M., 537
Vincent, W. S., 65
Vinogradov, A., 4472
Vinogradskij, B., 4408
Violante, C., 4703
Virtanen, A. I., 1608
Visser, R. H., 52
Visser, T., 208
Vitkovskij, V. L., 2190
Vizer, J., 613
Vladimirova, G. B., 4917
Vlahopoulos, P., 2218
Vlasov, I. A., 2325
Vlk, J., 4045
Vnučkova, V. A., 2353
Vodopivec, S., 3310
Vogel, H. J., 1074
Vogel, O. A., 264
Voinea, M., 2326, 2362
Voinov, M. I., 378
Voisin, J.-C., 1642
Volkin, E., 1074
Volkov, V. Ja., 996
Volosky de Hernández, D., 1549, 1562, 4096
Vorob'eva, F. M., 1218
Voročihina, A. Ja., 2130
Voronova, A., 4181

Vos, N., J., 1009
Vose, P. B., 3052
Voth, V., 3384–5
Vukov, K., 1956, 4516
Vuyst, A. de, 2729
Vysockij, A. A., 3342, 4626

Wada, B., 2460
Wada, T., 1701–4
Waddell, W. H., 255
Waddle, B. A., 1862
Wagner, E., 4716
Wagner, F., 1548
Wagner, R. P., 1220
Wagner, W., 2357
Wahl, Y., 4131
Wakeley, P. C., 4759
Wakonig, R., 3636
Waldher, J. T., 1440
Walkden Brown, C., 261, 4083, 4126
Walker, G. W. R., 1201, 3624, 3628
Walker, J. C., 983, 4379, 4409
Walker, J. G., *see* Walker, J. C.
Walker, T. K., 1153–4, 2403–4
Wall, J. R., 1032
Wallace, A. R., 4931
Wallace, A. T., 1348, 1591
Wallace, M. E., 1129, 3658
Wallen, V. R., 2390
Wallin, J. R., 695
Walter, E. V., 4200, 4906
Walter, J. M., 1447
Walters, M. S., 577, 4284
Waltl, K., 113
Wang, C.-L., 4882
Wang, C.-M., 1103
Wang, C.-W., 1393, 1404, 4758
Wang, F.-H., 1872
Wang, H., 2159, 3389
Wang, H.-L., 3608
Wang, M.-K., 3004
Wang, T.-Y., 1683
Wangenheim, K.-H. von, 679, 1813
Wannamaker, W. K., 737–9
Ward, D. J., 4208
Ware, J. O., 1351, 2430
Warner, R. M., 896
Warteresiewicz, M., 4016
Was, L., 1479
Wassenaar, L. M., 4691
Wassermann, F., 3950
Wassink, E. C., 2433
Watahara, T., 3584, 4811
Watanabe, K., 567
Watanabe, M., 1657
Watanabe, S., 313, 1657, 2160
Watanabe, T., 2493, 3249
Watanabe, Y., 1488, 4034
Watari, S., 853
Waterman, A. M., 2275, 3427
Watson, I. A., 330–1, 2790, 2857
Watson, J. D., 1074
Watts, L. E., 4771, 4817
Watts, V. M., 3483
Wauthy, R., 3245
Way, R. D., 925
Weaver, B. L., 3540
Weaver, J. B. (Jun.), 4441
Webb, R. B., 60, 80, 1187
Webb, R. E., 639, 4381
Weber, C. R., 1039, 2375, 2378
Weber, E., 2
Weber, W. A., 1754
Webster, G. C., 1074
Webster, T., 4209
Weibel, D. E., 2795, 4112
Weibel, R. O., 224
Weibull, G., 2641
Weigle, J. L., 4827
Weiling, F., 4826
Weinard, F. F., 3063
Weiner, M., 42
Weinstein, A., 1405
Weir, T. S., 2087
Weitzman, *see* Witsman
Welch, B. L., 1096
Wellensiek, S. J., 979, 2432
Welles, H. D., 3112
Wellhausen, E. J., 1334, 2935, 4174
Wellington, P. S., 2767
Wells, D. G., 1349, 1456
Wells, H. D., 3040–1
Wells, S. A., 139
Welsh, J. N., 1583
Wene, G., *see* Wene, G. P.
Wene, G. P., 4200, 4907
Wenk, H., 3129
Went, F. W., 2441
Went, J. C., 4752
Wenzl, H., 4364
Wermann, H., 867
Wermke, M., 3783
Werneck, H. L., 4636
Werner, H. O., 658
Wernham, C. C., 2950
Wessling, W. H., 737
West, C. A., 2485
West, O., 430
Wester, R. E., 4871
Weswig, P. H., 1336, 4290
Wetherell, D. F., 1160
Wettstein, D. von, 40, 480
Wettstein, W. von, 1242, 3431
Wexelsen, H., 4337
Weyers, W. H., 1614
Wharton, A. L., 806
Wheeler, E. J., 656
Wheeler, W. A., 2428
Whistler, R. L., 1613, 4154
White, R. W. (Jun.), 1361
White, W. J., 3618
Whitefield, J. F., 1148
Whitehead, M. D., 1767
Whitehouse, H. L. K., 21
Whitehouse, R. N. H., 203, 240, 1461
Whitehouse, W. E., 4665
Whiteley, J. R., 1054
Whiteside, A. G. O., 256, 1504
Whitfield, J. F., 3654
Whitmore, E. T., 1674
Whittington, W. J., 1207
Wickens, G. M., 3170
Widdowson, E., 3163
Wiebalck, H., 1947
Wiebe, G. A., 2979
Wiebols, W. H. G., 1451
Wiehe, P. O., 755
Wieloch, E., 2102, 4688
Wienhues, F., 1250
Wight, W., 4543–4
Wilcox, A. N., 2087
Wild, A. S., 2881
Wilkie, D., 3678
Wilkins, D. A., 583
Willey, L. A., 4365, 4568
Williams, C. F., 937, 3405
Williams, E. B., 4623
Williams, J. C. (Jun.), 1328, 4447
Williams, K. E., 4169
Williams, L. E., 4905
Williams, N. D., 1163
Williams, R. C., 1074
Williams, R. J., 538, 1075
Williams, R. R., 2069
Williams, T. D., 4414
Williams, W., 3697, 3793
Wills, A. B., 4584
Wilsie, C. P., 600, 619, 1766, 4321, 4324
Wilski, A., 4415
Wilson, A. R., 4372
Wilson, C., 221
Wilson, D. B., 1358
Wilson, F. D., 4483
Wilson, G. B., 3727, 3760
Wilson, J. F., 2507
Wilson, J. Y., 3751
Wilson, L. G., 3711
Wilson, R. A., 3339
Wilson, W. F. (Jun.), 4692
Wilten, W., 476–7, 484, 4211–2
Winge, Ø., 2520, 3665
Winkler, U., 2541
Winstead, N. N., 992, 1027
Winters, H. F., 868
Wiser, W. J., 1643
Wiskunde, L. H. S., 437
Wit, F., 4289
Withrow, R. B., 148
Witsman, L., 4490, 4505
Wittwer, S. H., 3494
Wöhrmann, K., 591
Wolf, F. A., 1094
Wolfe, M., 457, 459
Wollman, E. L., 1074, 1130
Wolski, T., 1462, 1598
Wood, C. A., 4582
Wood, D. J., 4541
Wood, D. R., 4152
Wood, E. A. (Jun.), 367
Wood, P. D., 4810
Woodard, O., 160
Woods, P. S., 3743
Woodward, V. W., 1402, 1406, 3785
Worden, H. A., 3439
Wright, C. E., 2602, 2605
Wright, G. M., 3611, 4066
Wright, R. E., 2410, 4923
Wu, H.-L., 4882
Wu, K.-H., 2113
Wu, K.-N., 1723
Wu, K.-Z., *see* Wu, K.-H.
Wu, S.-H., 3745
Wu, W. C., 4763
Wurster, C. F., 3947
Wygodzinsky, P., 1190
Wyllie, T. D., 1447
Wyss, O., 1157, 3698

Yabuno, T., 3593, 3599
Yagu, P., 2350
Yamada, M., 4034
Yamada, T., 4344
Yamada, W., 2985, 4270
Yamaguchi, H., 4264
Yamakawa, Y., 4248
Yamamoto, H., 4270
Yamamoto, T., 492
Yamanaka, H., 4913
Yamasaki, M., 102, 1575, 2479
Yamasaki, Y., 2486, 2494
Yamashita, K., 267, 347, 2470, 2483, 4030, 4037, 4117
Yampolsky, C., 3308
Yan, *see* Yen

Yanagawa, F., 2978
Yang, C.-F., 4042, 4304
Yang, M.-H., 1525
Yang, S.-C., 3004
Yang, S.-P., 2491
Yanoue, T., 4423
Yao, Y.-T., 4255
Yasuda, S., 2502
Yasue, T., 589
Yasuzumi, G., 2461
Yatsuyanagi, S., 3012
Yatuyanagi, *see* Yatsuyanagi
Yeager, A. F., 3453
Yeh, T.-Y., 1867
Yen, D. E., 1049, 2364
Yen, Y.-R., 1483
Yerkes, W. D. (Jun.), 4868
Yokoyama, S., 3268
York, T. L., 1032
Yoshida, Y., 3601
Yoshihara, K., 3099
Yoshii, H., 4265
Yoshimura, H., 2978
Yoshimura, S., 4266
Young, D. A., 673, 4382
Young, H. C. (Jun.), 2804
Young, H. W., 4847
Young, L. C., 4382
Young, R. W., 709
Young, W. R., 4330
Yü, C.-J., 4255
Yu, L.-T., 1723
Yúfera, E. Primo, *see* Primo Yúfera, E.

Zacharias, M., 1807
Zadina, J., 629, 3153
Zadoks, J. C., 1555, 4088
Zaec, V. K., 2107, 4608
Zajcev, G. S., 1880
Zajkovskaja, H. Ė., 1936, 1963
Žák, V., 4496
Zakopal, J., 3156
Zaleski, A., 3091
Žalnin, V. S., 4609
Zamenhof, S., 1074, 3691, 3695
Zamotajlov, S. S., 4670
Zana, J., 1978, 4497
Zapata B., M., 2808, 2858
Zappalà, A., 4704
Zaumeyer, W. J., 1033
Zavadskij, K. M., 1177–8
Žavoronkov, P. A., 2076
Ždanov, L. A., 4559
Žebrak, A. R., 2382, 4033
Zeilinga, A. E., 2319
Zelenskij, S. S., 1938, 1579
Zelle, M. R., 1214, 3700
Zemljanuhin, A. A., 594
Zentmyer, G. A., 2181
Zerpa, D. M. de, 1200
Ziboh, C. O., 2044
Zielinski, Q. B., 2105, 4607
Zillinsky, F. J., 136, 138
Zimmer, K. G., 46
Zimmerman, L. H., 2032
Zimmermann, K. F., 3097
Zinder, N. D., 2529
Zinnai, I., 960
Zitelli, G., 4091–2
Zobel, B., *see* Zobel, B. J.
Zobel, B. J., 1243, 3438, 4764–6
Zosimovič, V. P., 779, 1965, 4514
Zscheile, F. P., 1553
Zscheischler, J., 2901
Zub, L., 2018
Zubeldia, A., 1821
Zuber, M. S., 465, 1620–1, 2399, 2930, 2942, 4155, 4164
Zucconi, L., 3463
Žukovskij, P. M., 334, 1407, 1417, 1539, 2426, 2708–9
Zuluaga, P. A., 2214, 2223
Žurbickij, Z. I., 2093
Zvereva, P. A., 2634
Zweifel, J., 1682
Zwintzscher, M., 875

SUBJECT INDEX

to Plant Breeding Abstracts, Volume XXVIII

ABIES. Fir
Geographical races, 954
History and evolution, 2295
Hybridization, interspecific, 2295
Photoperiodism, 954
Abutilon
Chromosome number, 1904
Introduction, plant, 3220
Acacia, for tanning
Breeding, 2045
Genetics, 2045, 4576
Hybridization, interspecific, 2045, 4576
Kotochalia, 2045
Leaf, 2045, 4576
Polyploidy, 2045
Quantitative characters, 2045, 4576
Tannin, 2045
Acclimatization
Panax, 2047
Acenaphthene, 2596
Lupinus. Lupin, 4358
Oryza. Rice, 2656
Acer
Clines, 1393, 3246
Cold resistance, 3246
Dormancy, 1393
Ecotypes, 4520
Growth period, 3246
Habit, 3246
Heat, drought, resistance, 3246
Quantitative characters, 3422
Taxonomy, 3422
Variation, 3246
Aceria
Citrus, 891
Acetobacter
Mutation, 2403–4
Acetylethyleneimine
Vicia. Broad bean, 3769
Achillea
Azulene, 2048
Acorus
Polyploidy, 3627
Acquired characters, inheritance, *see* inheritance of acquired characters
Acriflavine, 89, 3701
Actidione
Pisum. Pea, 3727
Saccharomyces, 2491
Actinomycin M, 81
Adaptation, 42, 2494, 3718
Crop plants, 1411
Poa, 1360
Saccharomyces, 1058–60, 2411, 2488–9, 4919
Triticum. Wheat, 2748
Adenine
Pisum. Pea, 152
Adenosine triphosphate, 64
Aegilops
Amphidiploidy, 280, 346
Aneuploidy, 348
Asynapsis, 270
Centromere, 1482
Chromosome aberrations, 4032
Chromosome number, 4032
Aegilops—continued.
Cytoplasmic inheritance, 2743
Fungi, 1260
Genetics, 3868
Genome analysis, 269, 3621, 4116
Geographical races, 347
Haploidy, 297
History and evolution, 347, 3623, 4117
Hybridization, intergeneric, 184, 269–70, 297, 1260, 1482, 3623, 3868–9, 4036–8
Hybridization, interspecific, 346, 4032
Meiosis, 280, 297, 4036
Pollen, 4038
Polyploidy, 347
Puccinia, 184, 1259
Sterility, fertility, 280, 4037
Sterility, male, 2743, 4038
Taxonomy, 4117
Translocation, 184
Aegle
Chromosome morphology, 909
Chromosome number, 909
Aelia
Triticum. Wheat, 2871
Agave
Hybridization, interspecific, 751
Aging, 1186, 3679
Allium. Onion, 4791
Avena. Oats, 2887
Lycopersicon. Tomato, 1021
Nicotiana. Tobacco, 3265
Agriculture, 1084, 3569–70, 4939
Agronomy, *see* agriculture
Agropyron
Amphidiploidy, 282, 3624
Breeding, 3029
Chromosome morphology, 3616, 4305
Chromosome number, 3075, 3592
Colour, 3632
Flower, 4304
Genome analysis, 276, 1489
Geographical races, 594
Germination, 595
Hybridization, 1326, 3028
Hybridization, graft, 3820
Hybridization, intergeneric, 182, 276–8, 1260, 1408, 1425, 1488–91, 1933, 2625, 2667, 2745, 2805, 2809, 2818–9, 2834, 3028, 3632, 3869, 4042–3
Hybridization, interspecific, 3616
Inflorescence, 4305
Meiosis, 1488, 1755
Perennial habit, 1490
Pollination, 3076–7
Puccinia, 277–8, 1259, 2667
Segmental exchange, 2667
Segregation 4043
Sterility, fertility, 3624
Taxonomy, 3616
Tilletia, 278
Varieties, 593
Variety trials, 1491
Viruses, 1425, 2667
X rays, 4043
Agrostis
Ecotypes, 3786
Hybridization, interspecific, 3786

Albomycin
Streptomyces, 4911
Albugo
Helianthus. Sunflower, 182
Alcohols
Allium. Onion, 85
Alder, *see Alnus*
Aleurites. Tung
Breeding, 852
History and evolution, 853
Hybridization, interspecific, 175
Variety trials, 3935
Alfalfa, *see Medicago*
Alkaloids
Nicotiana. Tobacco, 177, 2676
Alleles, *see* genetics
Alleles, multiple, *see* multiple alleles
Allium
Amphidiploidy, 976
Apomixis, 977
Cell division, 2577–8
Chromosome aberrations, 4796–7
Chromosome morphology, 2318, 3467, 4795
Colchicine, 1215
Diallyl disulphide, 4797
Embryo sac, 4798
Endomitosis, 977, 2573
Endosperm, 2573
Hybridization, interspecific, 976
Meiosis, 976–7
Photoperiodism, 975
Polyploidy, 1215, 4798
Allium. Chives
Chromosome aberrations, 3636
X rays, 3636
Allium. Leek
Breeding, 2639
Allium. Onion
Aging, 4791
Alcohols, 85
Amitosis, 4790
Bile, 3460
Bolting, 2317
Boron, 3461
Breeding, 974, 1299, 2300, 2669, 3464
Cell division, 75–6, 79, 2455, 2576, 3460–2
Chelating agents, 4792
Chemicals, effect of, 3463
Chromosome aberrations, 85, 1203, 1211, 2316, 3463, 3636, 3768, 4791–2
Chromosome biochemistry, 3749
Cold resistance, 2300
Cyanate, 75
Cysteine, 3466
Cytoplasmic inheritance, 4770, 4794
Genetics, 3465, 4793
Gibberellins, 1211, 2576
Growth period, 2300, 3464
Hybridization, 2315, 2669, 2677, 3958, 4770, 4794
Hypertonic solutions, 3462
Inbreeding, 972
Iodoacetamide, 3768
Isoamyl alcohol, 2316
Kinetin, 2576
Phosphate, 76
Pollen, 2576
Quality of product, 973–4, 2677
Statistics. Experimental designs, 973
Sterility, male, 2639, 3465, 4770, 4793–4
Taxonomy, 108
Thallium acetate, 3466
Varieties, 182
Variety trials, 2317
X rays, 79, 1203, 3636, 4791
Allopolyploidy, *see* polyploidy
Almond, *see Prunus*
Alnus. Alder
Breeding, 2261
Germination, 3431
Hybridization, interspecific, 950, 2260, 2279, 3430–1
Leaf, 2280
Polyploidy, 3431
Taxonomy, 2280
Alocasia, 786
Aloe
Chromosome, fine, structure, 749
Colour, 3224
Dominance, 3224
Flower, 3224
Meiosis, 749
Alopecurus
Aneuploidy, 566
Pollination, 591
Alpha rays, *see* α rays
Alsike clover, *see Trifolium*
Alternaria
Biotypes, 4852
Cucumis. Melon, 175
Heterocaryosis, 4852
Lycopersicon. Tomato, 3453, 4851
Amaranthus
History and evolution, 3581
Aminoacids, 1220, 2463
Brassica, 969
Cereals, 2729
Helminthosporium, 343, 501
Oryza. Rice, 536, 4243
Puccinia, 2856
Triticum. Wheat, 1553
Zea. Maize, 456–7, 4189
Amitosis
Allium. Onion, 4790
Gossypium. Cotton, 1872
Triticum. Wheat, 1525, 2764
Vicia. Broad bean, 2572
Amorphophallus, 786
Polyploidy, 3249
Amphidiploidy
Aegilops, 280, 346
Agropyron, 282, 3624
Allium, 976
Brasssica, 2483
Brassica. Rape, 3291
Cereals, 235, 3999
Crop plants, 186
Gossypium. Cotton, 4445
Hibiscus, 3223
Nicotiana. Tobacco, 789–90, 3889
Poa, 569
Secale. Rye, 280–1, 3989
Triticum. Wheat, 279–82, 2746, 3624, 3989, 4044
see also polyploidy
Amphorophora
Biotypes, 4594
Rubus. Raspberry, 918, 3379, 4589
Amygdalus, see Prunus
Amylose
Hordeum. Barley, 1666
Zea. Maize, 433, 1613, 2942–3, 4154–5, 4164
Anacardium. Cashew
Flower, 4664
Germination, 1295
Pollination, 4664
Quality of product, 1295
Ananas. Pineapple
Biotypes, 2207, 3389
Variety trials, 2671
Anatomy
Broussonetia, 1903
Gossypium. Cotton, 1386

Anatomy—*continued.*
Grasses, 1738, 4278
Lycopersicon. Tomato, 1010
Medicago, 4327
Oryza. Rice, 523, 527, 1712
Vitis, 1232
Zea. Maize, 1634
Andrecium, *see* flower
Andropogon
Breeding, 1325, 3957
Germination, 1325
Growth period, 586
Mannitol, 1325
Pollen, 584
Polyploidy, 584
Taxonomy, 1749
Andropogoneae
Apomixis, 588, 3044
Chromosome number, 4293
History and evolution, 4293
Meiosis, 4293
Anethum, 3590
Varieties, 2639
Aneuploidy, 62, 3952
Aegilops, 348
Alopecurus, 566
Arachis. Groundnut, 4667
Avena. Oats, 2886
Brassica. Cabbage, 4780
Crop plants, 3985
Festuca, 566, 582
Gossypium. Cotton, 1373, 1866
Grasses, 4276
Holcus, 3073
Malus. Apple, 181
Phleum, 566
Poa, 566, 1740–1
Raphanus. Radish, 4780
Secale. Rye, 370, 1599, 1602–3, 2473, 4276
Spinacia. Spinach, 1385
Tripsacum, 1624
Triticum. Wheat, 2473, 2481, 2763, 2869, 4053–4
Zea. Maize, 146, 1624
Angelica, *see Archangelica*
Annona
Breeding, 3902
Anther, *see* flower, and pollination
Anthesis, *see* flower
Anthocyanins
Prunus. Cherry, 2144
Zea. Maize, 2911
Anthonomus
Gossypium. Cotton, 737–9, 2675
Antiauxins
Forest trees, 2262
Anthyllis. Kidney vetch
Taxonomy, 614
Aphanomyces
Beta. Sugar beet, 784
Apion
Corchorus. Jute, 3220
Apium. Celeriac
Varieties, 3444
Apium. Celery
Cercospora, 175
Septoria, 175
Variety trials, 4818
Apomixis
Allium, 977
Andropogoneae, 588, 3044
Bothriochloa, 557, 588
Capillipedium, 557
Citrus, 3361, 4653
Dichanthium, 557
Grasses, 1732, 4277
Apomixis—*continued.*
Malus. Apple, 2068, 2109
Poa, 142, 540, 1359, 3055
Pseudotsuga. Douglas fir, 3442
Rubus, 2183
Saccharum. Sugar cane, 1918
Secale. Rye, 275, 4041
Themeda, 588
Triticum. Wheat, 275, 4041
Zea. Maize, 4172
Apple, *see Malus*
Apricot, *see Prunus*
Arachis. Goundnut
Aneuploidy, 4667
Breeding, 121, 901, 1277, 2679
Boron, 172
Centres of origin, 4671
Flower, 4668–9
Genetics, 3971
Growth period, 4668–9
Hybridization, 2664
Hybridization, interspecific, 182, 1279, 4667, 4671
Morphology, 3372
Mutation, induced, 195, 1310, 1319, 3971
Mycosphaerella, 131, 1310
Neutrons, 2465
Pellicularia, 121, 1310
Quality of product, 902
Quantitative characters, 3971
Sterility, fertility, 4670
Taxonomy, 3372, 4666, 4671
Varieties, 2173, 3371–2
Variety trials, 121, 900, 2173–4, 2662
Viruses, 132, 3373
X rays, 195, 2465, 3971
α rays, 1444, 1447
Archangelica
Chromosome number, 2020
Taxonomy, 2020
Argon
Vicia. Broad bean, 2580–1
Argyrotaenia
Persea. Avocado, 911
Arrhenatherum
Breeding, 116
Ecotypes, 1729
Polyploidy, 1730
Arsenate, sodium
Ustilago, 182
Arsenite, sodium
Vicia. Vetch, 2585
Artemisia, 3590
Chromosome number, 3309
Genetics, 2049
Polyploidy, 1270, 2049–51, 3309
Quality of product, 1270, 2050
Santonin, 3310
Sterility, fertility, 2049
Taxonomy, 3310
Artichoke, *see Helianthus*
Artocarpus
Varieties, 897
Ascochyta
Biotypes, 2390
Phaseolus, 4776
Pisum. Pea, 3957, 3997
Ascorbic acid, 3760
Citrus, 890
Glycine. Soya bean, 1041
Ipomoea. Sweet potato, 709
Lycopersicon. Tomato, 1008, 1009
Ribes. Black currant, 1270
Ascospora
Prunus. Peach, 2082
Ash, *see Fraxinus*

Asimina. Papaw
Sterility, fertility, 2160
Asparagus
Breeding, 979, 1259, 2706
Chromosome morphology, 978, 4799
Chromosome number, 978
Colchicine, 2319
Genetics, 181
Mutation, induced, 2706
Neutrons, 2706
Polyploidy, 1260, 2319
Puccinia, 181
Sex, 979, 2319
Varieties, 2674
X rays, 2706
Aspergillus
Citric acid, 2406
Gluconic acid, 2406
Heterocaryosis, 2406
Mutation, induced, 2489
Polyploidy, 2509
Quality of product, 4913
Segregation, 2509
Ultraviolet rays, 2489, 2509
Astragalus
Chromosome number, 1789, 4362
Taxonomy, 1789
Astrebla
Chromosome number, 563
Taxonomy, 563
Asynapsis
Aegilops, 270
Triticum. Wheat, 270
Asyndesis, *see* asynapsis
Atherigona
Sorghum, 2660–1
Atomic explosion, 1070
Oryza. Rice, 2467
Atropa
Quality of product, 2052
Aubergine, *see Solanum*
Aurantia
Lupinus. Lupin, 4358
Autopolyploidy, *see* polyploidy
Autumn decline
Oryza. Rice, 1717, 4264
Auxins
Forest trees, 2262
Avena. Oats
Aging, 2887
Aneuploidy, 2886
Breeding, 107, 110, 138, 229, 240, 1259, 1261, 1269, 1308, 1330–1, 1450, 1579, 1938, 2628, 2639, 2667, 2678, 2722, 2726, 2793, 2886, 2889, 3792, 3957–8, 3994, 3998, 4126, 4131, 4133
Caryopsis, 1585–6
Chromosome aberrations, 1301
Chromosome number, 1589
Cochliobolus, 3957
Cold resistance, 240, 359–60, 1260, 1308, 1590, 2889, 4128, 4133
2,4-D, 4113
2,4-DB, 219
Ditylenchus, 1596, 3786, 3790
Embryology, 356
Erysiphe, 107, 175, 1591
Fertilization, sexual, 356
Fungi, 361, 1259
Genetics, 357, 364, 1341, 1442, 1596, 2893
Germination, 1301
γ rays, 349
Hairs, 2893
Heat, drought, resistance, 232, 359–60
Helminthosporium, 175, 365–6, 1338, 1341, 2792, 2893–4, 4134
Avena—continued.
History and evolution, 1584
Hybridization, 1593, 2728, 3790, 4128
Hybridization, graft, 1580
Hybridization, interspecific, 136, 182, 1589, 2477, 2667, 2726, 2893
Inflorescence, 358, 2888
Irrigation, 238
Leptosphaeria, 362, 1455, 1592, 2667, 2890, 3958, 3997
Lodging, 1330–1, 2678, 4129
MCPB, 219
Mičurinism, 358, 2888
Mutation, induced, 175, 1304, 3045
Mutation, spontaneous, 365, 2477
Neutrons, 349, 2792
Niacin, 357
Oscinella, 1272
Perennial habit, 3997
Photoperiodism, 4013
Polyploidy, 136, 1304, 2887
Protein, 357
Puccinia, 175, 181, 364, 366, 1260, 1341, 1442, 1566, 1594–5, 2667, 2678, 2726, 2848, 2893, 4122, 4131–3
Quality of product, 1587–8, 4127
Radiation, 1304, 3045
Riboflavin, 357
Statistics. Experimental designs, 224, 1117
Sterility, fertility, 136, 349
Stem, 1330–1
Taxonomy, 1589, 3598
Toxoptera, 367
Ustilago, 366, 1593, 2667, 3956
Varieties, 114, 119, 181, 207, 230, 351–5, 361, 365–6, 1457, 1581–3, 2643, 2707, 2720, 2882–5, 3602, 4001, 4123–6
Variety trials, 108, 230, 350, 1448, 1468, 2645, 2663, 2720, 2878–81, 4119–22
Vernalization, 4013
Viruses, 1429, 3956
Water balance, 1585
X rays, 175, 1301, 2792, 2877
Yield, 2656
Avocado, *see Persea*
Azaserine, 2463, 3707
Azulene
Achillea, 2048

BACTERIA, 1085, 1121, 1151, 3639, 3775, 3782, 4926
Bacteriophages, 18, 28, 33, 143, 1076, 1131, 1135, 1389, 2505–6, 2511, 2514–5, 2517–9, 2529–30, 2541, 2548, 2552, 3644–5, 3654, 3657, 3669–70, 3703–6, 3708, 3710, 3782, 3949–50, 4926
Mutation, 1148
Bacterium
Solanum. Potato, 691
Zea. Sweet corn, 4905
Bahia grass, *see Paspalum*
Baking quality, *see* quality of product
Banana, *see Musa*
Barberry, *see Berberis*
Barley, *see Hordeum*
Bean, *see Phaseolus, and Vicia*
Beardgrass, *see Andropogon*
Beech, *see Fagus*
Beet, *see Beta*
Beetroot, *see Beta*
Belladonna, *see Atropa*
Benincasa
Breeding, 2341
Varieties, 2341
Bent, *see Agrostis*
2(3)-benzoxazolinone
Secale. Rye, 1608
Berberis. Barberry
Puccinia, 2849

Bermuda grass, *see Cynodon*
Beta
Breeding, 2622
Colchicine, 1792
Germination, 103
History and evolution, 624
Hybridization, interspecific, 1944
Photoperiodism, 624
Polyploidy, 119, 1792
Root, 4364
Seed storage, 103
Selection, artificial, 4363
Taxonomy, 625, 1793
Viruses, 1794
Beta. Beetroot
Bolting, 2300, 2306, 2310, 3445, 3455
Breeding, 2300, 4770
Colchicine, 1270
Growth period, 4770
Hybridization, interspecific, 2639
Photoperiodism, 2306
Polyploidy, 1270
Quality of product, 2300, 3856
Selection, artificial, 3455
Temperature, effect of, 2306
Varieties, 3444, 3453
Variety trials, 2311
Beta. Mangel
Breeding, 2639, 4367
Hybridization, 626, 1796
Polyploidy, 1797
Quality of product, 1798
Statistics. Experimental designs, 2598
Varieties, 3121
Variety trials, 1795, 3118–20, 4365–6
Vegetative reproduction, 4367
Beta. Sugar beet
Aphanomyces, 784
Bolting, 1930, 1950, 1981, 2306, 2626, 3786
Breeding, 775, 780, 1244, 1929–32, 1934–5, 1939–43, 1955, 1957–76, 3800, 4500–3, 4514
Calcium, 783
Cercospora, 1259–60, 1276, 1932, 1941–2, 1962, 1981
Colchicine, 1949, 4510
Cytoplasmic inheritance, 1952–3
Development, 1965, 4499
Erysiphe, 1970
Genetics, 1952–3
Heterodera, 4517
Heterosis, 4509
Hybridization, 626, 782, 1260, 1967, 3786, 4515
Hybridization, interspecific, 1259–60, 1960, 2639
Introduction, plant, 1276
Magnesium, 783
Meiosis, 1944
Mergamma, 108
Mixed crops, 1935
Monogerm seed balls, 780–2, 1259, 1263, 1929, 1942, 1954–5, 1968, 4512–5
Morphology, 1960
Nitrogen, 783
Osmosis, 4511
Phosphorus, 783
Photoperiodism, 2306
Photosynthesis, 1961
Physiology, 777, 2090
Plastids, 4510
Pollination, 779, 1936, 1963
Polyploidy, 777–8, 1259, 1942, 1947–9, 2474, 2476, 3245, 3812, 3877–8, 4505, 4509–11
Potassium, 783
Quality of product, 1276, 1956–78, 1981, 2090, 2638, 4508, 4516
Seed production, 1940, 2476, 3878
Selection, artificial, 1945, 1964
Beta—continued.
Sodium, 783
Statistics. Experimental designs, 4496–7
Statistics. Genetics, 1945
Sterility, fertility, 778, 1944, 1951
Sterility, male, 1259–60, 1952–3
Temperature, effect of, 2306
Varieties, 776, 1276, 1946, 2638, 4506–8
Variety trials, 774, 1795, 1978, 1982–3, 2617, 2645, 3118, 3244, 4498, 4504–5, 4513
Viruses, 1260, 4518
Yellows, 1259
Yield, 1977
Betula. Birch
Dormancy, 1404
Hybridization, interspecific, 948
Leaf, 2278
Photoperiodism, 1404
Taxonomy, 2278
Bile
Allium. Onion, 3460
Biochemistry, 197, 1078–9, 2607, 4937
Crop plants, 3322
Fruit crops, 2094
Grasses, 3051
Ipomoea. Sweet potato, 2092
Leguminous forage crops, 3051
Malus. Apple, 2091, 2111
Puccinia, 247
Prunus. Cherry, 2095
Prunus. Plum, 2095
Saccharomyces, 4917
Solanum. Potato, 1834, 4395
Sorghum, 231
Trifolium. White clover, 3049
Triticum. Wheat, 1459, 2772, 2855
Vegetable crops, 2093
Venturia, 197, 3337–8
Vitis, 940, 4721
Zea. Maize, 1646, 4169
Biology, 1071
Biometry, *see* quantitative characters
Biotin
Vitis, 936
Biotypes
Alternaria, 4852
Amphorophora, 4594
Ananas. Pineapple, 2207, 3389
Ascochyta, 2390
Cannabis. Hemp, 3580
Cassia, 3117
Cercospora, 1980
Cereals, 3787
Citrus. Mandarin, 4656
Cladosporium, 2674
Claviceps, 1057
Cochliobolus, 4080
Colletotrichum, 1270, 4868
Ditylenchus, 2872
Erysiphe, 182, 243, 498, 1465, 2732, 2783, 2982
Fungi, 216
Fusarium, 121, 851, 1050, 1443, 3956–7, 4821, 4896
Glomerella, 3481, 3485
Harmolita, 1680
Helianthus. Sunflower, 3787
Helminthosporium, 501, 2398, 2984, 3997
Heterodera, 1833, 4416
Hordeum. Barley, 1661
Hypomyces, 4867
Kabatiella, 554
Mayetiola, 345
Melampsora, 182
Meloidogyne, 4853
Mycosphaerella, 1426
Nectria, 958

Biotypes—*continued.*
Nematodes, 3164
Pellicularia, 121
Perilla, 3787
Peronospora, 2707, 3521
Phleum, 3787
Phoma, 2156
Phytophthora, 107, 657, 669, 695–7, 799, 1270, 1825–9, 2607, 2667, 2716, 3153–5, 3262, 3273, 3336, 3795, 3962, 4382, 4406
Piricularia, 3070
Plasmodiophora, 981, 1270, 3468, 3861
Polyspora, 107
Pseudopeziza, 4329
Puccinia, 182, 245–7, 332–40, 364, 433, 499, 1294, 1341, 1427, 1430, 1446, 1450, 1455, 1594–5, 1561–8, 2492, 2628, 2682, 2733, 2783, 2796, 2804–5, 2809–10, 2812–20, 2822–6, 2830–47, 2852, 2855–6, 2863, 2865–9, 2891–2, 2954, 3620, 3861, 3932, 3957, 3997, 4087–105, 4122, 4132–3
Rhyncosporium, 1435, 2734
Synchytrium, 700–1, 1830, 3159, 4407
Taraxacum, for rubber, 2064
Tilletia, 2787
Trifolium. Subterranean clover, 612
Triticum. Wheat, 1511
Uromyces, 610
Ustilago, 1432, 2783, 2785, 4012, 4224
Venturia, 1244
Verticillium, 3960
Viruses, 503, 894, 1028, 1437–8, 1445, 2000, 3264, 3501–2, 3511, 4420, 4519
Xanthomonas, 2368, 3241
Birch, *see Betula*
Birds
Sorghum, 2671, 3933
Birdsfoot trefoil, *see Lotus*
Blackberry, *see Rubus*
Black currant, *see Ribes*
Black locust, *see Robinia*
Blue grass, *see Poa*
Blue stem, *see Andropogon*
Bolting
Allium. Onion, 2317
Beta. Beetroot, 2300, 2306, 2310, 3445, 3455
Beta. Sugar beet, 1930, 1950, 1981, 2306, 2626, 3786
Brassica. Cabbage, 3472
Vegetable crops, 2306
Borassus
Sex, 2176
Boron, 1207, 2494
Allium. Onion, 3461
Arachis. Groundnut, 172
Citrus. Lemon, 892
Theobroma. Cacao, 814
Botany, 81, 3662, 3833, 4937
Crop plants, 3575
Bothriochloa
Apomixis, 557, 588
Chromosome number, 3064, 4294
History and evolution, 3064
Hybridization, intergeneric, 3044
Hybridization, interspecific, 557, 3044
Polyploidy, 3064, 3772
Stomata, 3772
Taxonomy, 4294
Botrytis
Brassica. Cabbage, 2089
Fagopyrum. Buckwheat, 2875
Rubus. Raspberry, 4589, 4594
Ultraviolet rays, 215
Vicia. Broad bean, 215
Bouteloua
Breeding, 1325
Germination, 1325
Bouteloua—continued.
Introduction, plant, 4301
Mannitol, 1325
Varieties, 4300
Brachiaria
Reproduction, 3932
Brachyelytrum
Chromosome morphology, 1753
Taxonomy, 1753
Brachypodium
Chromosome morphology, 4305
Chromosome number, 3075
Inflorescence, 4305
Bracts, *see* inflorescence
Bramble, *see Rubus*
Brassica
Aminoacids, 969
Amphidiploidy, 2483
Genetics, 969, 3468, 4800
Peronospora, 4801
Plasmodiophora, 980
Sterility, female, 4800
Varieties, 3583
Viruses, 4802
Brassica. Brussels sprouts
Breeding, 3453, 3792, 4583, 4588
Colour, 3453
Genetics, 1270
γ rays, 4584
Growth period, 1270
Habit, 3453
Hybridization, 4770
Inbreeding, 4770
Mutation, induced, 4584
Mycosphaerella, 1270
Neutrons, 4584
Pollination, 1270
Quality of product, 4807
Sterility, fertility, 4782
Sterility, male, 4770
Varieties, 4778
Variety trials, 108, 4588
Brassica. Cabbage, 2299
Aneuploidy, 4780
Breeding, 2300–2, 2325, 2639, 2674, 4583, 4806
Bolting, 3472
Botrytis, 2089
Chimeras, 4804
Colour, 3453
2,4-D, 3474
Development, abnormal, 982
Edge disease, 3862
Enzymes, 2089
Fusarium, 3474
Genetics, 4776
Genome analysis, 2320
γ rays, 4584
Growth period, 3472
Heat, drought, resistance, 2300, 3856
Heterosis, 3470–1
Hybridization, 3472, 3786
Hybridization, intergeneric, 1270
Hybridization, interspecific, 2320, 3291, 3453
Multiple alleles, 2321
Multiple genes, 3468
Mutation, induced, 4584, 4776
Neutrons, 4584
p-Nitrophenol, 3474
Plasmodiophora, 2324–5, 4776
Polyploidy, 4805
Quality of product, 2302, 2322–3, 3445, 3856, 4807
Radiation, 4776
Respiration, 2089
Seed production, 4808
Sterility, fertility, 2321, 4805

Brassica. Cabbage—*continued.*
Varieties, 101, 182, 983, 2305, 3444
Variety trials, 108, 2309, 2326, 2620, 3469, 3475, 4803
Vegetative reproduction, 4806
Vernalization, 982
Xanthomonas, 3473
Brassica. Cauliflower
Breeding, 984, 2639, 4801
Genetics, 1270
Growth period, 1270
Hybridization, 3786
Peronospora, 4801
Scorch, 985
Taxonomy, 4810–1
Varieties, 3584
Variety trials, 108, 4809–10
Brassica. Indian mustard
Breeding, 836, 3913
Genetics, 3913
Hybridization, interspecific, 840
Varieties, 3583
Xenia, 840
Brassica. Kale
Breeding, 2639
Hybridization, 3786
Leaf, 3786
Quality of product, 4807
Variety trials, 3475
Brassica. Kohl rabi
Hybridization, 3786
Quality of product, 4807
Varieties, 627, 1801–2
Variety trials, 2670
Brassica. Mustard
Hybridization, 3480
Inbreeding, 3479
Seed, 3480
Brassica. Rape
Amphidiploidy, 3291
Breeding, 836, 1259, 2028, 2639, 4561
Ceuthorrhynchus, 3293
Colchicine, 3291
Cold resistance, 1260, 1730, 2026
Hybridization, 1260, 3786
Hybridization, interspecific, 2031
Polyploidy, 119, 1730
Quality of product, 1260, 2026
Statistics. Biometry, 3290
Statistics. Genetics, 3289
Sterility, fertility, 4563
Varieties, 2029–31, 3284, 3292, 3583
Variety trials, 839, 4562
Xenia, 840
Yield, 840, 1260
Brassica. Sarson
Breeding, 836, 3287, 3913
Genetics, 3913
Varieties, 837, 3288
Brassica. Sprouting broccoli
Genetics, 3633
Hybridization, 3786
Modifiers, 2327
Multiple alleles, 2327
Sterility, fertility, 2327
Sterility, male, 3633
Brassica. Swede
Breeding, 2307, 2639, 2667
Cold resistance, 1730
Colour, 3453
Genome analysis, 2320
Hybridization, 626, 2630
Hybridization, interspecific, 2320, 3453
Multiple genes, 3468
Plasmodiophora, 2667, 3125
Polyploidy, 1730
Brassica. Swede—*continued.*
Quality of product, 3124
Varieties, 3123, 3125, 4370
Variety trials, 1266, 1795, 4369
Viruses, 4371
Brassica. Toria
Breeding, 836, 3913
Genetics, 3913
Hybridization, interspecific, 840
Polyploidy, 838
Sterility, fertility, 838
Xenia, 840
Brassica. Turnip
Breeding, 2639
Embryo, 119
Genetics, 1799
Hybridization, intergeneric, 1270
Hybridization, interspecific, 119, 3291, 3786
Polyploidy, 119, 2642
Taxonomy, 3122
Varieties, 1266, 3122
Variety trials, 1795, 1800, 4368
Bread fruit, *see Artocarpus*
Breeding, 51, 1082, 1216, 2188
Brinjal, *see Solanum*
Broad bean, *see Vicia*
Broccoli, heading, *see Brassica*
Broccoli, sprouting, *see Brassica*
5-Bromouracil, 2556, 3708
5-Bromouracil deoxyriboside, 2556
Bromus
Breeding, 116, 1744, 2674, 3024, 3056
Chromosome aberrations, 577, 1344, 4284
Chromosome number, 1344
Genome analysis, 578
Hybridization, 574–5
Hybridization, interspecific, 576–7, 4284
Meiosis, 578, 4284
Photoperiodism, 1744
Pollination, 579
Polyploidy, 578
Statistics. Genetics, 575
Sterility, fertility, 1344
Ustilago, 580
Varieties, 182
Yield, 3056
Broussonetia
Anatomy, 1903
Taxonomy, 1903
Brown streak
Manihot. Cassava, 129
Bruchus
Lens. Lentil, 4901
Vicia. Broad bean, 1030
Brussels sprouts, *see Brassica*
Brylkinia
Chromosome morphology, 562
Taxonomy, 562
Buckwheat, *see Fagopyrum*
Bud mutation, *see* mutation, somatic
Busseola
Zea. Maize, 4201
Butryospermum
Varieties, 835

CABBAGE, *see Brassica*
Cacao, *see Theobroma*
Cacodylate, sodium
Hordeum. Barley, 182
Cadmium
Saccharomyces, 2491
Caffeic acid
Solanum. Potato, 698
Cajanus
Breeding, 1278–9, 1282, 3536

Cajanus—continued.
Chromosome morphology, 4903
Flower, 2395
Fusarium, 121, 1282, 3536
Genetics, 1052, 4902
Heterosis, 3535
Hybridization, 3535
Hybridization, intergeneric, 4903
Hybridization, interspecific, 1282
Leaf, 4904
Meiosis, 4903
Mutation, spontaneous, 2395
Sterility, fertility, 2395
Variation, 4904
Varieties, 4899
Calandra
Sorghum, 2992, 3933
Zea. Maize, 3930
Calcium, 1204, 1391
Beta. Sugar beet, 783
Vitis, 2208, 2212, 2216–9
Calonectria
Secale. Rye, 1608
Calyx, *see* flower
Camelina
Quality of product, 3855
Varieties, 2629
Camellia, see Thea
Canary grass, *see Phalaris*
Cannabis. Hemp
Biotypes, 3580
Breeding, 744, 1261, 4477
Hybridization, wide, 1891
Inbreeding, 3219, 4474
Introduction, plant, 4477
Quality of product, 1899
Septoria, 3219
Sex, 1899, 3219, 4475–6
Varieties, 1269
Cantaloupe, *see Cucumis*
Capillipedium
Apomixis, 557
Hybridization, interspecific, 557
Capsicum
Breeding, 182, 2669, 3283, 3453, 4774
Carotenoids, 4558
Cercospora, 169, 3957
Colour, 832
Flower, 2023
Fruit, 832, 2024
Fungi, 3454
Fusarium, 3282
Genetics, 169, 832–3, 2023–4, 3957, 4557
Geography, 3280
Grafting, 2670
Hybridization, 2670
Hybridization, graft, 3714
Hybridization, interspecific, 2670, 3279–80
Introduction, plant, 3281
Meloidogyne, 833
Polyembryony, 3955
Quality of product, 2024
Size, 3453
Sterility, fertility, 3279–80
Sterility, male, 4557
Taxonomy, 3280
Varieties, 174, 3453, 3587
Variety trials, 2025, 2619, 3282
Viruses, 175, 3283
X rays, 3955
Caragana
Genetics, 4734
Sterility, fertility, 4734
Carbon dioxide
Hordeum. Barley, 1649
Carbon dioxide—*continued.*
Malus. Apple, 2606
Carbon monoxide, 1376
Carica. Papaya
Viruses, 3378
Carotene
Ipomoea. Sweet potato, 709
Sorghum, 231, 4234
Carotenoids
Capsicum, 4558
Ipomoea. Sweet potato, 164
Carpel, *see* flower
Carpocapsa
Malus. Apple, 2118
Carrot, *see Daucus*
Carthamus. Safflower
Breeding, 1279, 2667, 3913
Chromosome number, 1302
Genetics, 3913
Growth period, 1342
Hybridization, 1342
Hybridization, interspecific, 1302, 4574
Pollination, 3305
Puccinia, 4574
Quality of product, 2667, 3304
Taxonomy, 1302
Varieties, 3303
Variety trials, 856, 2661–2
Yield, 856, 3303
Carya. Pecan
Breeding, 2165
Varieties, 3370
Caryocinesis, *see* cell division
Caryology, *see* nucleus
Caryopsis
Avena. Oats, 1585–6
Hordeum. Barley, 1275
Lolium, 1355
Oryza. Rice, 1695, 2997, 4263
Setaria, 3881
Triticum. Wheat, 316, 1268, 1526, 2773, 4029
Zea. Maize, 155, 445–6, 4151–2, 4192, 4195
Zea. Sweet corn, 2397
Caryotype, *see* chromosome morphology
Cashew, *see Anacardium*
Cassava, *see Manihot*
Cassia
Biotypes, 3117
Castanea. Chestnut
Breeding, 899, 2167
Endothia, 898–9, 2166–7
Hybridization, interspecific, 2628
Phytophthora, 2628
Pollination, 4660
Castor oil plant, *see Ricinus*
Casuarina
Hybridization, 4753
Polyploidy, 4753
Catalase
Triticum. Wheat, 4056
Cauliflower, *see Brassica*
Celeriac, *see Apium*
Celery, *see Apium*
Cell, 3682, 3741–2
Cell division, 72–4, 80–2, 1189, 2460, 2574–5, 2596, 3561, 3628, 3638, 3755–6, 3758–61, 3776, 3826, 4926
Allium, 2577–8
Allium. Onion, 75–6, 79, 2455, 2576, 3460–2
Lupinus. Lupin, 4358
Nicotiana. Tobacco, 3258, 3265
Oryza. Rice, 4248
Pisum. Pea, 1199, 3727
Ricinus. Castor oil plant, 4565
Rubus, 4683
Secale. Rye, 1603

Cell division—*continued.*
Solanum. Potato, 2577
Thea. Tea, 2578
Triticum. Wheat, 3806
Vicia. Broad bean, 77–8, 3757, 3762
Vitis, 2242
Cellulose
Zea. Maize, 465
Cenchrus
Reproduction, 3932
Centres of origin, 196
Arachis. Groundnut, 4671
Colchicum, 3312
Grasses, 538
Oryza. Rice, 3906
Zea. Maize, 4180
Centromere, 2456, 3751, 4934
Aegilops, 1482
Gossypium. Cotton, 4453
Triticum. Wheat, 1482
Cephalosporium
Triticum. Wheat, 1571
Cephalotaxus
Chromosome aberrations, 3434
Cephus
Triticum. Wheat, 344, 2726, 2797
Cerasus, see Prunus
Ceratitis
Prunus. Peach, 3359
Ceratocystis
Ulmus. Elm, 2705, 4752
Ceratostomella
Genetics, 4674
Hybridization, 4751
Phoenix. Date, 4674
see also Ceratocystis
Cercospora
Apium. Celery, 175
Beta. Sugar beet, 1259–60, 1276, 1932, 1941–2, 1962, 1981
Biotypes, 1980
Capsicum, 169, 3957
Cryptomeria, 961
Cucumis. Cucumber, 2639
Medicago, 3090
Nicotiana. Tobacco, 3263
Phaseolus, 1364
X rays, 1310
see also Mycosphaerella
Cercosporella
Triticum. Wheat, 323, 1259, 2783
Cereals
Aminoacids, 2729
Amphidiploidy, 235, 3999
Biotypes, 3787
Breeding, 128, 228–9, 240, 242, 1265, 1267, 1449, 1461, 2673, 2724, 3807, 3907, 3993, 4009
Cold resistance, 240, 1463, 2731, 4010
Competition, 239
Cytology, 234
Embryo, 4007
Fungi, 242
Growth period, 1265, 4000, 4004–5
Harvesting, 2730
Heat, drought, resistance, 4011
Heterodera, 1467
Hybridization, 196, 2668
Hybridization, graft, 3820
Hybridization, wide, 3664
Irrigation, 238
Mičurinism, 1181–2, 4000, 4005
Mutation, induced, 201, 2698
Ophiobolus, 244
Photoperiodism, 4005
Polyploidy, 127, 235
Cereals—*continued.*
Protein, 3997
Puccinia, 128, 247
Quality of product, 1092, 1460
Radiation, 2698
Segregation, 4004
Variation, 196, 3787
Varieties, 233, 1458, 3992, 4002
Variety trials, 225–7, 1469, 2727, 3798, 3802, 3997
Vernalization, 234, 3787
Water balance, 236, 4011
Yield, 1461, 4009
Ceresan
Oryza. Rice, 2656
Ceuthorrhynchus
Brassica. Rape, 3293
Chelating agents
Allium. Onion, 4792
Chemicals, effect of, 52, 83, 88, 1205, 1209, 1381, 2579, 3759, 3824, 3918, 4926
Allium. Onion, 3463
Crop plants, 3917, 3977
Hordeum. Barley, 3917
Linum. Flax, 743
Malus. Apple, 2071
Pisum. Pea, 1165
Chemistry, *see* biochemistry
Chermes
Pseudotsuga. Douglas fir, 4769
Cherry, *see Prunus*
Chestnut, *see Castanea*
Chiasma, *see* crossing over
Chickpea, *see Cicer*
Chicory, *see Cichorium*
Chilli, *see Capsicum*
Chilo
Zea. Maize, 470
Chimeras
Brassica. Cabbage, 4804
Crataegus, 2124
Datura, 3822
Gossypium. Cotton, 1172
Lycopersicon. Tomato, 1012, 1172
Malus. Apple, 2124, 4597
Solanum. Potato, 4395
Chives, *see Allium*
Chlorate, potassium
Crop plants, 102, 2479
Triticum. Wheat, 1575
Chlorine
Hordeum. Barley, 483
Chloris
Heat, drought, resistance, 2660
Reproduction, 3932
Soil pH, 2660
Chlorogenic acid
Solanum. Potato, 692, 698, 4410
Chloroplasts, *see* plastids
Chromatin, *see* nucleus
Chromosome aberrations, 48, 50, 52, 83–4, 86–7, 148, 200, 1202, 1204–5, 1207, 1209, 1376, 2463–4, 2579, 2582–4, 2587, 3626, 3642, 3766, 4926, 4930
Aegilops, 4032
Allium, 4796–7
Allium. Chives, 3636
Allium. Onion, 85, 1203, 1211, 2316, 3463, 3636, 3768, 4791–2
Avena. Oats, 1301
Bromus, 577, 1344, 4284
Cephalotaxus, 3434
Citrus. Citron, 3366
Crop plants, 1304, 2696, 3969
Cucurbita, 4826
Datura, 3822
Gossypium. Cotton, 1870

Chromosome aberrations—*continued.*
Hordeum. Barley, 182, 489–90, 1307, 1649, 1663–5, 2668, 2873, 2969, 4218–9
Lycopersicon. Tomato, 2350, 4854
Nicotiana. Tobacco, 792, 1989–90, 3259, 4531
Palms, 2175
Pisum. Pea, 4895
Pyrus. Pear, 3793
Secale. Rye, 369, 373, 4136
Solanum. Potato, 4392–3
Triticum. Wheat, 1480, 2765–6, 2873, 3892, 4014, 4032, 4052
Vicia. Broad bean, 8, 1208, 1210, 2580–1, 2586, 3767, 3769, 4861–3
Vicia. Vetch, 2585
Zea. Maize, 1345, 1380, 1625–6, 2469, 2938, 3954
see also mutation
Chromosome biochemistry, 66, 2568, 2570, 2607, 3709, 3747–8, 3796, 3953
Allium. Onion, 3749
Grasses, 1734
Leguminous forage crops, 3078
Zea. Maize, 3749
Chromosome breakage, 1399, 2588, 3770, 3796
Vicia. Vetch, 3771
Chromosome, fine structure, 27, 71, 145, 1198, 2458–9, 2461, 3752–4, 3953, 4926
Aloe, 749
Chromosome fragments, *see* aneuploidy
Chromosome maps, *see* linkage
Chromosome morphology, 68, 2471, 2571, 3758
Aegle, 909
Agropyron, 3616, 4305
Allium, 2318, 3467, 4795
Asparagus, 978, 4799
Brachyelytrum, 1753
Brachypodium, 4305
Brylkinia, 562
Cajanus, 4903
Citrus, 3360, 4652
Coffea. Coffee, 2006
Cupressus, 182
Diarrhena, 562
Digitalis, 2053
Grasses, 565
Hordeum. Barley, 1662
Lolium, 3061
Lycopersicon. Tomato, 3140
Pennisetum, 1686
Petroselinum. Parsley, 1056
Pinus. Pine, 964
Pisum. Pea, 4890, 4893
Saccharum. Sugar cane, 766
Secale. Rye, 1601
Solanum. Potato, 2607, 3140
Tripsacum, 4203
Triticum. Wheat, 293–4, 1523–4
Vitis, 4708
Zea. Maize, 2486, 3600
Chromosome number, 80, 1193–4, 2471, 3750
Abutilon, 1904
Aegilops, 4032
Aegle, 909
Agropyron, 3075, 3592
Andropogoneae, 4293
Archangelica, 2020
Artemisia, 3309
Asparagus, 978
Astragalus, 1789, 4362
Astrebla, 563
Avena. Oats, 1589
Bothriochloa, 3064, 4294
Brachypodium, 3075
Bromus, 1344
Carthamus. Safflower, 1302
Chromosome number—*continued.*
Citrullus. Water melon, 4823
Coffea. Coffee, 2009
Colchicum, 3311–2
Corchorus. Jute, 4479
Crop plants, 67
Crotalaria, 1757
Desmodium, 1757
Digitalis, 2053
Echinochloa, 3593
Eleusine, 133
Elymus, 3074–5, 3616
Elyonurus, 585
Feijoa, 4658
Forest trees, 4736
Gossypium. Cotton, 3192
Grasses, 561, 564, 1735–6, 2664, 3048, 3873
Hevea. Rubber, 2664
Indigofera, 1757
Ipomoea. Sweet potato, 3912
Iseilema, 3065
Lathyrus, 1757
Leguminous forage crops, 2664
Lotus. Birdsfoot trefoil, 4361
Lupinus. Lupin, 175, 1784, 1786
Malus. Apple, 3331, 4613
Medicinal plants, 866
Musa, for fibre, 1902
Palms, 903
Pennisetum, 1686, 4227
Phyllorachis, 590
Prunus. Cherry, 4597
Prunus. Plum, 4597
Psalliota, 1066
Ricinus. Castor oil plant, 100, 4565
Rubus, 4597, 4681–2
Saccharum. Sugar cane, 765–6, 1912, 3227, 3236, 4491
Sapium, 2027
Secale. Rye, 1484
Solanum, for fruit, 1196
Solanum. Potato, 1196, 2671, 3150
Sorghum, 557, 1688, 4232, 4295
Spinacia. Spinach, 1385
Stylosanthes, 1757
Tripsacum, 4203
Triticum. Wheat, 271, 1484, 2748, 4032, 4034
Zornia, 1757
Chromosome pairing, *see* meiosis
Chromosome substitution
Nicotiana. Tobacco, 1999
Triticum. Wheat, 3622
Chromosome, supernumerary, *see* aneuploidy
Chrysanthemum, as insecticide
Breeding, 1294, 3932
Pollination, 3932
Sterility, fertility, 1294
Variety trials, 3315
Cicadulina
Hordeum. Barley, 479
Cicer. Chickpea
Breeding, 116, 1279
Cold resistance, 4900
Enzymes, 3533
Fruit, 2393
Genetics, 3532
Growth period, 1051
Hairs, 3534
Heat, drought, resistance, 1051
Hybridization, interspecific, 4900
Leaf, 3532
Mutation, spontaneous, 2393
Mycosphaerella, 3534
Polyploidy, 3533
Seed, 4900
Varieties, 2629, 4899

Cichorium. Chicory
Pollination, 1259
Selection, artificial, 2331
Sterility, self, 1259
Variety trials, 986
Cichorium. Endive
Breeding, 2626
Sterility, fertility, 1260
Varieties, 4815
Cirphis
Zea. Maize, 1364
Citric acid
Aspergillus, 2406
Citron, *see Citrus*
Citrullus. Water melon
Breeding, 175, 2338, 2678, 3453, 3867, 3957, 4824
Chromosome number, 4823
Colour, 3453, 3875
Fruit, 991
Fusarium, 175, 2339, 3957, 4825
Genetics, 3875, 3880
Glomerella, 2675, 4824
Haploidy, 4823
Hybridization, 2337
Hybridization, interspecific, 3875
Introduction, plant, 3867
Polyploidy, 2337, 2483, 3875
Pseudoperonospora, 992
Quality of product, 990, 2338, 3484, 3875, 3880, 4825
Varieties, 990, 2336, 3453, 3483, 4820, 4822, 4825
X rays, 4823
Citrus
Aceria, 891
Apomixis, 3361, 4653
Ascorbic acid, 890
Breeding, 175
Chromosome morphology, 3360, 4652
Citrus essences, 99
History and evolution, 4652
Introduction, plant, 3328
Mičurinism, 2155, 4653
Polyembryony, 3362
Taxonomy, 99
see also Poncirus
Citrus. Citron
Chromosome aberrations, 3366
Meiosis, 3366
Citrus. Grapefruit
Hybridization, interspecific, 4654
Citrus. Lemon, 892
Breeding, 893
2-4D, 892
Hybridization, interspecific, 3367
Indole-3-butyric acid, 892
Pollen, 892
Spines, 893
Thiamin, 892
Citrus. Mandarin
Biotypes, 4656
Sterility, fertility, 2158
Citrus. Orange
Breeding, 893
Fruit, 2663
Hybridization, interspecific, 4654
Mutation, somatic, 890
Mutation, spontaneous, 2663
Quality of product, 3363
Spines, 893
Varieties, 4655
Viruses, 2157
Citrus. Pomelo
Flower, 2159
Varieties, 2159
Cladosporium
Biotypes, 2674
Cladosporium—continued.
Cucumis. Cucumber, 2639, 4832
Lycopersicon. Tomato, 179, 2670, 2682, 3447
Classification, *see* taxonomy
Clasterosporium
Prunus. Peach, 4632
Prunus. Plum, 4632, 4638
Claviceps
Biotypes, 1057
Secale. Rye, 4140
Variety trials, 3550
Climate, 67
Crop plants, 4943
Gossypium. Cotton, 1854
Zea. Maize, 2941
Clines
Acer, 1393, 3246
Eucalyptus, 959, 2283
Holcus, 3073
Trifolium. White clover, 4341
Clover, *see Melilotus and Trifolium*
Cob, *see Corylus*
Cochliobolus
Avena. Oats, 3957
Biotypes, 4080
Genetics, 167, 2952
Hordeum. Barley, 3956
Mutation, induced, 2667
Oryza. Rice, 3014–5, 3945, 4265
Sex, 2952
Sterility, fertility, 167
Triticum. Wheat, 343
Variation, 1679
Zea. Maize, 167, 469, 2956
Cocksfoot, *see Dactylis*
Cocoa, *see Theobroma*
Coconut, *see Cocos*
Cocos. Coconut
Breeding, 141, 904, 4672–3
Hybridization, 905
Pollination, 863
Coffea. Coffee
Breeding, 1294, 2005–7, 2672, 3272, 3945
Chromosome morphology, 2006
Chromosome number, 2009
Colchicine, 2006, 2664
Embryology, 2009
Epistasis, 802
Hemileia, 133, 2006, 3932
Hybridization, 2664
Hybridization, interspecific, 133, 2006, 2664
Pollination, 2010
Polyploidy, 2006, 2664
Sterility, fertility, 803
Taxonomy, 804
Varieties, 803–4, 1300, 2008, 3272
Coffee, *see Coffea*
Coffee spot
Triticum. Wheat, 2859
Coix
Hybridization, intergeneric, 3902
Meiosis, 3902
Cola
Breeding, 3931
Colour, 3931
Fruit, 3931
Genetics, 3931
Colchicine, 1201, 2471, 3760
Allium, 1215
Asparagus, 2319
Beta, 1792
Beta. Beetroot, 1270
Beta. Sugar beet, 1949, 4510
Brassica. Rape, 3291
Coffea. Coffee, 2006, 2664

Colchicine—*continued.*
Coriandrum, 3548
Cucumis. Cucumber, 2343
Glycine. Soya bean, 132
Gossypium. Cotton, 2664
Grasses, 1731
Hordeum. Barley, 1297, 1649, 2726
Lolium, 4289
Lupinus. Lupin, 4358
Malus. Apple, 1270
Melilotus. Sweet clover, 1776
Oryza. Rice, 2664
Paspalum, 1314
Pinus. Pine, 97
Pisum. Pea, 3727
Prunus. Apricot, 2667
Prunus. Cherry, 1270, 2081
Prunus. Plum, 2081
Pyrus. Pear, 1270
Raphanus. Radish, 1270
Ribes. Black currant, 4594
Ribes. Red currant, 1270
Saccharum. Sugar cane, 3227
Salix. Willow, 182
Secale. Rye, 4114
Solanum. Potato, 671, 685
Sorghum, 132, 510, 2990, 3933
Thea. Tea, 3268
Trifolium. Minor species, 1776
Triticum. Wheat, 279, 296, 4107, 4114
Vicia. Broad bean, 1210, 3767
Vitis, 3404
Zea. Maize, 451
Colchicum
Centres of origin, 3312
Chromosome number, 3311–2
Geography, 3311
Hybridization, interspecific, 3312
Taxonomy, 3311–2
Cold, effect of, 3761
Cucumis. Cucumber, 3489
Prunus. Apricot, 4633
Vitis, 1232
Cold resistance
Acer, 3246
Allium. Onion, 2300
Avena. Oats, 240, 359–60, 1260, 1308, 1590, 2889, 4128, 4133
Brassica. Rape, 1260, 1730, 2026
Brassica. Swede, 1730
Cereals, 240, 1463, 2731, 4010
Cicer. Chickpea, 4900
Corylus. Hazel, 948
Crop plants, 2714
Dactylis, 556, 3026
Fruit crops, 875–6
Hordeum. Barley, 231, 240, 1260, 2979–80, 4223
Juglans. Walnut, 948, 3323
Lycopersicon. Tomato, 1025, 2300, 2359, 3445, 4850
Malus. Apple, 874, 882, 2091, 2113–4, 3335, 3944, 4618–21
Medicago, 2667, 2671, 3088, 4322, 4326–7
Oryza. Rice, 1715, 3012
Persea. Avocado, 2180
Petroselinum. Parsley, 4776
Phaseolus. Lima bean, 1297
Pisum. Pea, 4770
Pome fruits, 1260
Populus. Poplar, 2247
Prunus. Almond, 2075
Prunus. Apricot, 2075–6, 3349, 4632
Prunus. Cherry, 3354
Prunus. Nectarine, 3357
Prunus. Peach, 2075, 2153–4, 3357
Prunus. Plum, 2081, 2129, 2139–40, 3352, 4636
Cold resistance—*continued.*
Pseudotsuga. Douglas fir, 2252, 2254
Puccinia, 2850
Pyrus. Pear, 882, 3335, 3346, 4619
Ribes, 920
Ribes. Black currant, 874, 2190
Ribes. Gooseberry, 923
Rubus. Blackberry, 919
Secale. Rye, 1420
Solanum. Potato, 2633–5
Spinacia. Spinach, 3478
Stone fruits, 1260
Thea. Tea, 2478, 3270–1, 4545
Trifolium, 606
Trifolium. Red clover, 609, 1420, 3027
Triticum. Wheat, 318, 1269, 1273, 1364, 1450, 1473, 1534–6, 1538, 3938, 4076–7
Vitis, 1298, 2239, 3399, 3409–10, 4718–20
Zea. Maize, 463, 1259–60
Collections, plant, *see* introduction, plant
Colletotrichum
Biotypes, 1270, 4868
Corchorus. Jute, 3220
Cucumis. Cucumber, 1001
Hibiscus, 175, 748
Linum. Flax, 4473
Linum. Linseed, 4473
Medicago, 3959
Nicotiana. Tobacco, 1997
Phaseolus, 1259–60, 1364, 2299, 2367, 2639, 3815, 3862, 3962
Ribes. Black currant, 920
Ribes. Red currant, 920
Theobroma. Cacao, 817
Trifolium. Red clover, 177, 611
see also Physalospora
Colocasia, 786
Heat, drought, resistance, 3250
Colour, 53, 2418, 2555, 3696
Agropyron, 3632
Aloe, 3224
Brassica. Brussels sprouts, 3453
Brassica. Cabbage, 3453
Brassica. Swede, 3453
Capsicum, 832
Citrullus. Water melon, 3453, 3875
Cola, 3931
Digitalis, 3793
Gossypium. Cotton, 1869
Hordeum. Barley, 1168, 3806
Linum. Flax, 1893, 1896
Linum. Linseed, 1896
Lotus. Birdsfoot trefoil, 135
Lupinus. Lupin, 618, 1782, 3107, 3110
Lycopersicon. Tomato, 969, 4838
Malus. Apple, 2703, 3329–30, 4607
Medicago, 1761
Nicotiana. Tobacco, 1994, 3882, 4526, 4535
Oryza. Rice, 1280, 1694–5, 3001, 4238–9
Paspalum, 1335
Phaseolus, 2671
Phaseolus. Lima bean, 1036
Phleum, 1743
Pisum. Pea, 3453, 3523–4, 4888
Prunus. Cherry, 4632
Puccinia, 1678
Pyrus. Pear, 3329
Secale. Rye, 368
Solanum. Egg plant, 3879
Solanum. Potato, 3795
Triticum. Wheat, 1478, 2773, 3632, 3895, 4029
Zea. Maize, 185, 445–6, 1614, 2936, 3947, 3954, 4150–1, 4191
Colza, *see Brassica*
Compatibility, *see* sterility, fertility

Competition, 2565
Cereals, 239
Crop plants, 3988
Hordeum. Barley, 3890
Nicotiana. Tobacco, 3889, 4532
Oryza. Rice, 530, 3891
Trifolium. White clover, 4343
Triticum. Wheat, 4075
Zea. Maize, 4141
Complementary genes, *see* multiple genes
Complex loci, 9, 12, 1138, 2550
Gossypium. Cotton, 3200
Zea. Maize, 445–6
Cone disease
Pinus. Pine, 2255
Cooking quality, *see* quality of product
Copper
Piricularia, 2494
Saccharomyces, 1058–60, 2488
Corchorus. Jute
Apion, 3220
Breeding, 3220, 3910, 4478
Chromosome number, 4479
Colletotrichum, 3220
Cork, 746
Genetics, 3220
Hybridization, interspecific, 1900, 3220
Linkage, 3921
Macrophomina, 3220
Meiosis, 3220
Mutation, induced, 3220
Photoperiodism, 3926
Pollen, 745, 3221, 4480
Polyploidy, 3220
Rhizoctonia, 3220
Sterility, fertility, 1900, 3220
Sterility, male, 3221
Varieties, 4478
Variety trials, 746
X rays, 3220
Coriander, *see Coriandrum*
Coriandrum, 3590
Colchicine, 3548
Polyploidy, 3548
Quality of product, 2400
Varieties, 4555
Cork
Corchorus. Jute, 746
Corky root
Lycopersicon. Tomato, 2358
Corn, *see* cereals, *Hordeum, Triticum and Zea*
Cornus
Quality of product, 4675
Corolla, *see* flower
Corylus. Hazel
Breeding, 948
Cold resistance, 948
Hybridization, interspecific, 2081
Corynebacterium
Medicago, 553, 3023, 4327
Solanum. Potato, 652
Corynespora
Cucumis. Cucumber, 4834
Cosmic rays
Hordeum. Barley, 4218
Secale. Rye, 2895
Cotton, *see Gossypium*
Couch, *see Agropyron*
Coumarin
Melilotus. Sweet clover, 137, 555, 615–6, 3025, 3618, 4347–8, 4350–1
Cowpea, *see Vigna*
4-CPB
Malus. Apple, 223
Crab grass, *see Digitaria*
Cranberry, *see Oxycoccus*
Crataegus
Chimeras, 2124
Crimson clover, *see Trifolium*
Cronartium
Pinus. Pine, 2251
Crop plants, 1087, 3570
Adaptation, 1411
Amphidiploidy, 186
Aneuploidy, 3985
Bacteria, 2667
Biochemistry, 3322
Botany, 3575
Breeding, 104, 111–2, 120, 147, 186, 189, 1070, 1088–90, 1225–7, 1245, 1253–8, 1271, 1274–5, 1293, 1304, 1312, 1333, 1352, 1363, 1366, 1368, 1419, 1421, 2423–4, 2483, 2601, 2608, 2641, 2647, 2649–50, 2665, 2673, 2681, 2684, 2713, 3573, 3800–1, 3805, 3809, 3819, 3849–51, 3853–4, 3857–8, 3864–6, 3903–5, 3919, 3925, 3927–9, 3934, 3963–4, 3969, 4943
Chemicals, effect of, 3917, 3977
Chlorate, potassium, 102, 2479
Chromosome aberrations, 1304, 2696, 3969
Chromosome number, 67
Climate, 4943
Cold resistance, 2714
Competition, 3988
Degeneration, 1418
Development, 1228
Development, abnormal, 209
Ecotypes, 2441
Fungi, 1422, 2667
Genetics, 1369, 2454, 2685, 3919–20
Gibberellic acid, 3991
γ rays, 1398, 2600
Heat, drought, resistance, 214, 1421, 2715, 3925
Height, 3991
Heterosis, 199, 1247, 1407, 2484, 2607
History and evolution, 105, 192, 1091, 2708–9, 3984
Hormones, 3927
Hybridization, 2686
Hybridization, graft, 205
Hybridization, wide, 1408, 3321, 3966
Inheritance of acquired characters, 2715
Introduction, plant, 210–1, 213, 1253, 1415–7, 2649, 2711–2, 3320–2, 3576, 3922–4, 3946, 3987
Leaf, 209
Mičurinism, 2451, 3845, 3978–80
Mutation, induced, 193, 203–4, 1248, 1409–10, 2668, 2689–94, 2696, 2700, 3785, 3803, 3917, 3968, 3970, 3973–8
Pathology, 212–3, 2484, 2713, 3919
Photoperiodism, 2717, 3990
Pollen, 1371
Polyploidy, 186, 189, 2479, 2483, 3985
Quality of product, 3986
Quantitative characters, 3920
Radiation, 193, 203–4, 1069–70, 1224–5, 1304, 1312, 1333, 1368, 1409–10, 2422, 2668, 2691–4, 2696, 2700, 3784–5, 3803, 3968–70, 3973–6
Radioactive isotopes, 3810
Reproduction, 3927
Seed production, 1418
Selection, artificial, 206, 1228, 2607, 3813, 3838, 3981
Statistics. Experimental designs, 2599, 2611
Sterility, fertility, 1371
Sterility, self, 189
Taxonomy, 2425, 3838
Toxic soils, 1419
Translocation, 1312
Variation, 192, 2687–8, 3788, 3967
Varieties, 1291, 1412–3, 3574, 3982–3
Variety trials, 109, 118, 1353, 2609–10, 2627, 2640, 2644, 2646, 3798, 3802, 3859–60, 3863
Water, effect of, 2717

Crop plants—*continued.*
X rays, 193, 204, 3810, 3917
Yield, 111, 206
Crossing, *see* hybridization
Crossing over, 1390–1, 1403, 1405, 2518, 3651, 3661–2
Pisum. Pea, 4894
Secale. Rye, 4135
Tripsacum, 1624
Vicia. Broad bean, 3663
Zea. Maize, 385, 1624, 3954
Crotalaria
Chromosome number, 1757
Hybridization, intergeneric, 4359
Hybridization, interspecific, 1296
Introduction, plant, 3220
Pollen, 4359
Cryptomeria
Breeding, 961
Cercospora, 961
Polyploidy, 960
Cryptorrhynchus
Salix. Willow, 1905
Cucumber, *see Cucumis*
Cucumis. Cucumber
Bacteria, 4829
Breeding, 175, 2300–2, 2639, 2675, 3443, 3957
Cercospora, 2639
Cladosporium, 2639, 4832
Colchicine, 2343
Cold, effect of, 3489
Corynespora, 4834
Development, 1000
Dominance, 3588
Embryo, 4830
Erysiphe, 3446, 3956, 4829
Genetics, 1001, 4834
Glass, cultivation under, 4775
Glomerella, 1001, 1270, 4833
Growth period, 3445, 4775
Haploidy, 4830
Hormones, 999
Hybridization, 996–8, 1297, 2342, 2630, 3487, 4779, 4827–8
Meiosis, 3588
α-Naphthaleneacetic acid, 4831
Photoperiodism, 2344, 3489
Pollination, 4828
Polyploidy, 2343, 3443
Pseudoperonospora, 175, 3957, 4828
Quality of product, 2301–2, 4832
Sex, 999, 2344, 3488–9, 4827, 4831
Sterility, male, 3487
Temperature, effect of, 2344, 3488
Varieties, 174, 2305, 4829
Viruses, 217, 4832–3
Yield, 2300
Cucumis. Melon
Alternaria, 175
Breeding, 1270, 1299, 2300, 3453, 3957
Erysiphe, 175, 3961
Fusarium, 989
Growth period, 987
Heterosis, 987
Hybridization, 2333
Hybridization, graft, 4819
Pollen, 2334
Pollination, 988
Polyploidy, 2334
Pseudoperonospora, 175
Quality of product, 1270, 2300, 2335, 3961
Sex, 988
Varieties, 2333, 2335, 3453, 3482, 4820
Variety trials, 2621
Cucurbita
Breeding, 182, 2300–2, 2338, 2340, 3453
Cucurbita—continued.
Chromosome aberrations, 4826
Habit, 993
Hybridization, graft, 4819
Hybridization, interspecific, 994, 3965
Hybridization, wide, 993
Pollination, 994
Quality of product, 2300–2, 2338, 2340
Seed, 2671
Size, 3486
Sterility, fertility, 4826
Taxonomy, 2670
Varieties, 3453
Cucurbits
Habit, 993, 2332
Mičurinism, 993
Cultivars, *see* varieties
Cupferron
Vicia. Broad bean, 4861
Cupressus
Chromosome morphology, 182
Currant, *see Ribes*
Cyanate, potassium
Allium. Onion, 75
Cyanide, potassium
Vicia. Broad bean, 4861–2
Cyanogenetic glycosides
Trifolium. White clover, 181
Cydonia. Quince
Hybridization, intergeneric, 4589
Varieties, 3347, 3603
Cynodon
Varieties, 1362, 3956
Variety trials, 1361
Cyphomandra
Hybridization, graft, 2353, 3493
Cypress, *see Cupressus*
Cyrtosperma, 786
Cysteamine
Hordeum. Barley, 1684
Cysteine
Allium. Onion, 3466
Gossypium. Cotton, 4463
Ophiobolus, 244
Pulses, 4859
Cystine, *see* cysteine
Cytology, 2568, 3738–40, 4933
Cereals, 234
Leguminous forage crops, 2668
Saccharomyces, 4915, 4920
Triticum. Wheat, 2668
Cytoplasm, 1186, 3679
Saccharomyces, 4923
Zea. Maize, 4187
Cytoplasmic inheritance, 34–6, 40, 1076, 1139, 2542–3, 2597, 2607, 3675–8, 3680–1, 3833, 3835–6
Aegilops, 2743
Allium. Onion, 4770, 4794
Beta. Sugar beet, 1952–3
Fragaria. Strawberry, 15
Linum. Flax, 2434
Pennisetum, 4228
Ricinus. Castor oil plant, 843
Saccharomyces, 2410
Sesamum. Sesame, 2037
Solanum. Potato, 1808
Vegetable crops, 191
Vitis, 930
Zea. Maize, 185, 190, 455–6, 1632, 2936, 4151, 4188
Zea. Popcorn, 1055
Cytospora
Populus. Poplar, 3428, 4748

2,4-D
Avena. Oats, 4113

2,4-D—*continued.*
Brassica. Cabbage, 3474
Citrus. Lemon, 892
Glycine. Soya bean, 2677
Malus. Apple, 223
Saccharum. Sugar cane, 1919
Solanum. Potato, 3132
Triticum. Wheat, 2873, 4113
Dactylis
Breeding, 556, 2674, 3955, 3957, 4280
Cold resistance, 556, 3026
Ecotypes, 1729, 3786
Growth period, 3955, 4281
Hybridization, 3026, 3786, 4281
Polyploidy, 1730
Puccinia, 3957
Teeth, 3861
Varieties, 573
Variety trials, 572
Dandelion, *see Taraxacum*
Date, *see Phoenix*
Datura
Chimeras, 3822
Chromosome aberrations, 3822
Polyploidy, 1270, 3822
Sterility, fertility, 1270
Daucus. Carrot
Breeding, 2639, 3453
Introduction, plant, 971
Psila, 4785
Quality of product, 3453, 3856
Root, 4784
Seed production, 4784
Selection, artificial, 3453
Taxonomy, 108
Varieties, 3453, 4783
Variety trials, 2309
2,4-DB
Avena. Oats, 219
Hordeum. Barley, 219
Triticum. Wheat, 218
DDT
Triticum. Wheat, 2854, 4106
Zea. Sweet corn, 4907
Deletion, *see* translocation
Demissin
Solanum. Potato, 1835
Deschampsia
Polyploidy, 4299
Taxonomy, 4299
Designs, experimental, *see* statistics, experimental designs
Desmodium
Chromosome number, 1757
Deterioration during storage, *see* quality of product
Development, 1194, 1218, 2442, 2538, 3835
Beta. Sugar beet, 1965, 4499
Crop plants, 1228
Cucumis. Cucumber, 1000
Elaeis. Oil palm, 2042
Festuca, 582
Gossypium. Cotton, 4454
Hordeum. Barley, 1677
Lupinus. Lupin, 3106
Lycopersicon. Tomato, 3494
Mangifera. Mango, 122
Oryza. Rice, 1708
Pisum. Pea, 3811, 4895
Prunus. Cherry, 2143
Ribes. Black currant, 3380, 4688
Ribes. Red currant, 3380
Secale. Rye, 2899
Solanum. Potato, 686
Torulopsis, 3558
Vitis, 2244
Zea. Maize, 2485, 2900
Development, abnormal
Brassica. Cabbage, 982
Crop plants, 209
Nicotiana. Tobacco, 790, 2677
Pinus. Pine, 2290
Raphanus. Radish, 3456
Solanum. Potato, 1815
Trifolium. White clover, 4342
Diallyl disulphide
Allium, 4797
Diarrhena
Chromosome morphology, 562
Taxonomy, 562
Diatraea
Saccharum. Sugar cane, 122, 1909–10, 3242, 3961 4493
Sorghum, 182
Zea. Maize, 1364, 3962
Dichanthium
Apomixis, 557
Hybridization, intergeneric, 3044
Hybridization, interspecific, 557
Polyploidy, 3772
Stomata, 3772
p-Dichlorobenzene, 84, 3770
Vicia. Vetch, 3771
α, β-Dichloroisobutyrate, sodium
Gossypium. Cotton, 1856, 4438–9
Didymella
Rubus. Raspberry, 4589
Diepoxybutane
Hordeum. Barley, 1168
Differentiation, *see* development
Digitalis
Chromosome morphology, 2053
Chromosome number, 2053
Colour, 3793
Flower, 3793
Heterosis, 1270
Mutation, induced, 3793, 3942
Polyploidy, 867, 1270
Quality of product, 867
Radioactive isotopes, 3793, 3942
Digitaria
Hybridization, interspecific, 589
Meiosis, 589
Dill, *see Anethum*
Diluters, *see* modifiers
Dioscorea. Yam
Introduction, plant, 4521
Sapogenins, 4521
Diospyros. Kaki
Pollen, 3368
Diospyros. Persimmon
Xenia, 3368
Dioxan
Hordeum. Barley, 483
Diplodia
Zea. Maize, 415, 423, 465–6, 1347, 1364, 1643, 3962
Distribution, *see* geography
Ditylenchus
Avena. Oats, 1596, 3786, 3790
Biotypes, 2872
Medicago, 182, 3037, 3092
Trifolium. Red clover, 1775, 3861, 4339
Dominance, 23, 3630
Aloe, 3224
Cucumis. Cucumber, 3588
Glycine. Soya bean, 3518
Lycopersicon. Tomato, 1306, 3794
Triticum. Wheat, 313, 1478, 1518, 2769, 4031
Zea. Maize, 2504
Dormancy
Acer, 1393
Betula. Birch, 1404

Dormancy—*continued.*
Malus. Apple, 2106
Nicotiana. Tobacco, 796
Oryza. Rice, 2997, 4269
Prunus. Plum, 2136
Pyrus. Pear, 2106, 3346
Solanum. Potato, 1816
Sorghum, 509
Triticum. Wheat, 1515–6
Dothichiza
Populus. Poplar, 3427–8, 4748
Dothidella
Hevea. Rubber, 2054, 2060, 3314, 4581
Douglas fir, *see Pseudotsuga*
Drought resistance, *see* heat, drought, resistance
Duplicate genes, *see* multiple genes
Dwarfing, *see* height

EARIAS
Gossypium. Cotton, 4424
Earliness, *see* growth period
Echinochloa
Breeding, 3908
Chromosome number, 3593
Hybridization, 3593
Meiosis, 3593
Taxonomy, 3593
Ecology, 2419
Ecotypes, 1218, 3737
Acer, 4520
Agrostis, 3786
Arrhenatherum, 1729
Crop plants, 2441
Dactylis, 1729, 3786
Fraxinus. Ash, 4755
Grasses, 3789
Lolium, 3786
Medicago, 4309, 4312–8
Onobrychis. Sainfoin, 3787
Oryza. Rice, 3595
Picea. Spruce, 1241
Pinus. Pine, 1241, 2433, 3437
Pseudotsuga. Douglas fir, 967
Trifolium. Red clover, 1729
Edge disease
Brassica. Cabbage, 3862
Edgeworthia
Polyploidy, 3226
Egg plant, *see Solanum*
Elaeis. Oil palm
Breeding, 857, 859, 861, 864, 2042, 2044, 3307, 4575
Development, 2042
Genetics, 2664
Heat, drought, resistance, 862
Hybridization, 860, 2664, 3306, 4722
Hybridization, interspecific, 2664
Pollination, 858, 865, 2043
Quality of product, 2044
Sex, 862, 2042
Sterility, fertility, 860
Taxonomy, 3308
Yield, 865, 2042–3
Elder, *see Sambucus*
Eleusine
Breeding, 507, 1278, 1280, 1285, 3908
Chromosome number, 133
Growth period, 3594
Varieties, 512
Variety trials, 2725
Elm, *see Ulmus*
Elsinoe
Rubus. Raspberry, 4594
Elymus
Chromosome number, 3074–5, 3616
History and evolution, 2482
Elymus—continued.
Hybridization, graft, 1493
Hybridization, intergeneric, 182, 2482, 2964, 3028, 3616
Hybridization, interspecific, 4302
Meiosis, 4302
Pollen, 3074
Sterility, fertility, 3074
Taxonomy, 3074
Elyonurus
Chromosome number, 585
Embryo
Brassica. Turnip, 119
Cereals, 4007
Cucumis. Cucumber, 4830
Grasses, 3054
Melilotus. Sweet clover, 4353
Oryza. Rice, 3007
Phaseolus, 3508
Pyrus. Pear, 4627
Triticum. Wheat, 3844, 4084
Embryology
Avena. Oats, 356
Coffea. Coffee, 2009
Gossypium. Cotton, 4441
Grasses, 4277
Hibiscus, 4481
Pseudotsuga. Douglas fir, 2297
Solanum. Potato, 3131
Triticum. Wheat, 3624
Vitis, 4698
Embryo sac
Allium, 4798
Empoasca
Gossypium. Cotton, 3174, 3177
Phaseolus, 1364
Solanum. Potato, 663
Zea. Maize, 1364
Endive, *see Cichorium*
Endoconidiophora
Mutation, induced, 181
Quercus. Oak, 181
X rays, 181
Endomitosis, 71
Allium, 977, 2573
Solanum. Potato, 686
Zea. Maize, 2937
Endopolyploidy, *see* endomitosis
Endosperm
Allium, 2573
Euchlaena, 442
Gossypium. Cotton, 1872
Lycopersicon. Tomato, 4846
Sorghum, 2992, 4234
Triticum. Wheat, 1525, 2774, 3632
Zea. Maize, 442, 448, 1345, 1372, 1380, 2943–4, 4154–5, 4191
Endothia
Castanea. Chestnut, 898–9, 2166–7
Fagus. Beech, 898
Quercus. Oak, 2166
Ensilage
Zea. Maize, 1636, 4194
Enzymes, 42, 1149–50, 1161, 1392, 2512, 2516, 2539, 3840, 3902
Brassica. Cabbage, 2089
Cicer. Chickpea, 3533
Hordeum. Barley, 2977–8
Saccharomyces, 2520, 3552
Solanum. Potato, 4380
Triticum. Wheat, 322
Epidermis
Oryza. Rice, 3014
Triticum. Wheat, 314
Epistasis, 20, 1126, 3650
Coffea. Coffee, 802

Epistasis—*continued.*
Triticum. Wheat, 313, 4028, 4103
Zea. Maize, 384, 2912–3
Ergot, *see Claviceps*
Erianthus
Hybridization, intergeneric, 3227
Eriobotrya. Loquat
Sterility, fertility, 4630
Varieties, 4631
Eriosoma
Malus. Apple, 4589, 4591
Eruca, 3913
Erwinia
Pyrus. Pear, 3339, 3344, 4629
Eryophyes
Gossypium. Cotton, 736
Erysiphe
Avena. Oats, 107, 175, 1591
Beta. Sugar beet, 1970
Biotypes, 182, 243, 498, 1465, 2732, 2783, 2982
Cucumis. Cucumber, 3446, 3956, 4829
Cucumis. Melon, 175, 3961
Genetics, 321
Hordeum. Barley, 215, 1260, 2981, 2983, 3852, 3955, 4208
Linum. Linseed, 122
Lupinus. Lupin, 3109, 3861
Medicago, 3989
Nicotiana. Tobacco, 3251, 4540
Phaseolus, 2369
Secale. Rye, 3989
Trifolium. Red clover, 175, 554, 3027
Triticum. Wheat, 175, 321, 1540, 1569, 2722, 2853, 3955, 3989, 4023
Ultraviolet rays, 215
Esculin, 84
Essential oil plants
Quality of product, 117
8-ethoxycaffeine, 1208
Hordeum. Barley, 483
Vicia. Broad bean, 2581
Ethyleneimines
Vicia. Broad bean, 8
Ethylene oxide
Hordeum. Barley, 483, 1168
Malus. Apple, 2080
Ethylmethane sulphonate, 3706
Eucalyptus, 3432
Clines, 959, 2283
Hybridization, interspecific, 2281–2
Euchlaena
Endosperm, 442
Hybridization, intergeneric, 442
Mutation, spontaneous, 442
Segregation, 442
Euchromatin, *see* chromosome biochemistry
Eurygaster
Triticum. Wheat, 2871
Evolution, general theory, 14, 61–3, 959, 1176–80, 2559–65, 3691, 3730–5, 3779, 3788–9, 4736, 4931–2
see also history and evolution
Exoascus
Prunus. Almond, 4663

FAGOPYRUM. Buckwheat
Botrytis, 2875
Grafting, 2876
Hybridization, 1577–8, 2875
Mičurinism, 4118
Polyploidy, 2875–6
Varieties, 3579
Fagus. Beech
Endothia, 898
Geographical races, 2263
Fagus. Beech—*continued.*
Growth period, 2253
Leaf, 4749
Fasciation
Linum. Linseed, 4570
Lupinus. Lupin, 3108
Feijoa
Chromosome number, 4658
Reproduction, 4658
Female sterility, *see* sterility, female
Fertility, *see* sterility, fertility
Fertilization, sexual, 94, 1219, 2568, 2591, 3780
Avena. Oats, 356
Gossypium. Cotton, 3202
Helianthus. Sunflower, 2660
Lycopersicon. Tomato, 1021
Saccharomyces, 4924
Triticum. Wheat, 1519, 4062
Vicia. Broad bean, 4863
Fertilizers, *see* nutrients
Fescue, *see Festuca*
Festuca
Aneuploidy, 566, 582
Breeding, 1316, 2676, 3031
Development, 582
Genetics, 3786
Helminthosporium, 1433
Hybridization, 177
Hybridization, intergeneric, 177, 1726, 2676, 3031
Lead, 583, 3786
Polyploidy, 1730
Quality of product, 1336, 3031, 4290
Statistics. Genetics, 3062
Sterility, fertility, 119
Sterility, male, 582
Sterility, self, 1730
Taxonomy, 1747
Toxic soils, 583
Varieties, 1728, 2643
Zinc, 583
Ficus. Fig
Breeding, 2077
Growth period, 117, 2077
Quality of product, 895, 2077
Variety trials, 895–6
Field bean, *see Phaseolus* and *Vicia*
Fig, *see Ficus*
Filbert, *see Corylus*
Filipin, 1424
Fir, *see Abies*
Flax, *see Linum*
Flower, 1163, 2418, 3735, 3779
Agropyron, 4304
Aloe, 3224
Anacardium. Cashew, 4664
Arachis. Groundnut, 4668–9
Cajanus, 2395
Capsicum, 2023
Citrus. Pomelo, 2159
Digitalis, 3793
Fragaria. Strawberry, 4693
Glycine. Soya bean, 2664, 3520
Grasses, 3052
Hordeum. Barley, 2965
Lolium, 1355
Lotus. Birdsfoot trefoil, 135
Lupinus. Lupin, 618
Medicago, 600, 1761, 1766, 3082
Nicotiana. Tobacco, 1994
Persea. Avocado, 4678
Phaseolus, 2671
Phleum, 4283
Pisum. Pea, 1048, 3523
Prunus. Peach, 2151
Prunus. Plum, 3350, 3352

Flower—*continued.*
Sorghum, 3930
Triticum. Wheat, 2784, 4064
Vitis, 941
Zea. Maize, 1634
Fluorescence
Lolium, 107
Fluoride, sodium
Saccharomyces, 2411
Fodder beet, *see Beta*
Fomes
Picea. Spruce, 4768
Forage beet, *see Beta*
Forest trees
Antiauxins, 2262
Auxins, 2262
Breeding, 947, 949, 951–3, 1244, 2267, 3412–3, 3415, 4723–33, 4738
Chromosome number, 4736
Fungi, 4739
Growth period, 2269
Hybridization, interspecific, 3416
Hybridization, wide, 3324
Insects, 4739
Mutation, back, 2547
Pollination, 2270, 3418
Polyploidy, 3416
Quality of product, 4738
Seed production, 2265
Selection, artificial, 1233, 1239, 3417, 3887
Selection, natural, 2268
Statistics. Genetics, 3417, 3887
Vegetative reproduction, 2259, 4737
Formaldehyde, 3701
Hordeum. Barley, 182, 1651
Formol
Salix. Willow, 182
Fourcroya
Vitamins, 2710
Foxglove, *see Digitalis*
Fragaria. Strawberry
Breeding, 175, 2067, 2081, 2083, 2195–6, 2669, 3793, 4585–6, 4689, 4693
Cytoplasmic inheritance, 15
Flower, 4693
Genetics, 15, 4584
Germination, 3385–6, 4693
Heat, drought, resistance, 2200–1
Heat, effect of, 4589, 4593
Hybridization, interspecific, 2197, 3793
Introduction, plant, 4694
June yellows, 2198, 4584
Photoperiodism, 4693
Phytophthora, 4585
Quality of product, 929, 2073, 2201, 3450–1
Seed, 3386
Sphaerotheca, 15, 3387
Varieties, 927–8, 2087, 2185, 2197, 2199–202, 2667, 3383–4, 4586, 4691–2
Variety trials, 160, 926, 1259, 1298, 2203–4, 4604, 4690
Verticillium, 4695
Viruses, 2202, 4590
Fraxinus. Ash
Ecotypes, 4755
French bean, *see Phalaris*
Frost, *see* cold resistance
Fructose
Nicotiana. Tobacco, 798
Fruit
Capsicum, 832, 2024
Cicer. Chickpea, 2393
Citrullus. Water melon, 991
Citrus. Orange, 2663
Cola, 3931
Gossypium. Cotton, 725, 3177
Fruit—*continued.*
Linum. Flax, 1894
Lycopersicon. Tomato, 4847
Malus. Apple, 1231, 2606
Medicago, 3876
Musa. Banana, 121
Phaseolus, 2364
Pinus. Pine, 2292
Pisum. Pea, 3525
Prunus. Cherry, 2144
Prunus. Plum, 3350
Ribes. Black currant, 4594
Sesamum. Sesame, 2660, 4567
Solanum. Egg plant, 3879
Spinacia. Spinach, 3478, 4813
Theobroma. Cacao, 3275
Fruit crops
Biochemistry, 2094
Breeding, 871–3, 876, 1244, 2065–7, 2074, 2078–9, 3317, 3957, 4599–600
Cold resistance, 875–6
Hybridization, graft, 2084
Introduction, plant, 3320, 3324, 3923
Mutation, somatic, 2697
Radiation, 2697
Taxonomy, 3316
Varieties, 2085–6, 2094, 3318–9, 4602
Variety trials, 2096, 3316
Fungi, 1086
Fusaric acid
Fusarium, 4462
Fusarium
Biotypes, 121, 851, 1050, 1443, 3956–7, 4821, 4896
Brassica. Cabbage, 3474
Cajanus, 121, 1282, 3536
Capsicum, 3282
Citrullus. Water melon, 175, 2339, 3957, 4825
Cucumis. Melon, 989
Fusaric acid, 4462
Gossypium. Cotton, 1846–7, 1883–4, 3182, 3211–2, 3957, 4424, 4460–3
Humulus. Hop, 829
Linum. Flax, 107, 742–3, 1898
Linum. Linseed, 851, 3299
Lupinus. Lupin, 1270, 3109, 3861
Lycopersicon. Tomato, 2682, 3499, 3957, 4853
Medicago, 2671
Musa. Banana, 133
Mutation, induced, 4462, 4896
Passiflora, 2682
Pisum. Pea, 1049, 2671, 3862, 3958
Populus. Poplar, 3428, 4748
Ultraviolet rays, 4462
Vanilla, 2022
Vigna. Cowpea, 168
see also Calonectria, Gibberella and *Hypomyces*

Gamma rays, *see* γ rays
Genes, *see* genetics
Genes, multiple, *see* multiple genes
Genes, nature and physiology, 27–8, 1134, 1395, 2449–50, 2505, 2511, 2539, 2607, 3625, 3666–7, 3778, 3825, 3950, 4150–1, 4173, 4928
Genetics, 16, 18–9, 39, 143–4, 187–8, 474, 1072–3, 1085–6, 1119–24, 1187, 1230, 1440, 2415–7, 2442, 2447–8, 2462, 2493, 2499, 2507, 2512, 2519, 2521–2, 2525–30, 2548, 2594, 3560–2, 3613–4, 3642–4, 3646–8, 3754, 3782, 3794, 3829, 3888, 4927, 4929
Acacia, for tanning, 2045, 4576
Aegilops, 3868
Allium. Onion, 3465, 4793
Arachis. Groundnut, 3971
Artemisia, 2049
Asparagus, 181
Avena. Oats, 357, 364, 1341, 1442, 1596, 2893

Genetics—*continued.*
Beta. Sugar beet, 1952–3
Brassica, 969, 3468, 4800
Brassica. Brussels sprouts, 1270
Brassica. Cabbage, 4776
Brassica. Cauliflower, 1270
Brassica. Indian mustard, 3913
Brassica. Sarson, 3913
Brassica. Sprouting broccoli, 3633
Brassica. Toria, 3913
Brassica. Turnip, 1799
Cajanus, 1052, 4902
Capsicum, 169, 832–3, 2023–4, 3957, 4557
Caragana, 4734
Carthamus. Safflower, 3913
Ceratostomella, 4674
Cicer. Chickpea, 3532
Citrullus. Water melon, 3875, 3880
Cochliobolus, 167, 2952
Cola, 3931
Corchorus. Jute, 3220
Crop plants, 1369, 2454, 2685, 3919–20
Cucumis. Cucumber, 1001, 4834
Elaeis. Oil palm, 2664
Erysiphe, 321
Festuca, 3786
Fragaria. Strawberry, 15, 4584
Glycine. Soya bean, 1043, 2375, 3520
Gossypium. Cotton, 717, 737–9, 1847, 1869, 1873, 1881, 1890, 3170, 3177, 3957, 4424, 4440, 4446, 4457
Hibiscus, 3220
Hordeum. Barley, 139, 491, 498, 1661, 1667–8, 2502, 2668, 2960, 2967, 2973, 2975, 2983, 4215–6
Leguminous forage crops, 2668
Lespedeza, 2421
Linum. Flax, 1896–7
Linum. Linseed, 1896, 3832, 3913
Lolium, 3058
Lotus. Birdsfoot trefoil, 135
Lupinus. Lupin, 618, 1787, 3106–7, 3111
Lycopersicon. Tomato, 181, 969, 1004, 1027, 1297, 2503, 3492, 3496, 3502, 3793, 4847, 4855
Malus. Apple, 2101, 4622
Medicago, 1760–1, 1766, 1768, 2677, 3035, 3082, 3876, 3959
Melilotus. Sweet clover, 137, 555, 615, 3618, 4352
Mentha, 4910
Nicotiana. Tobacco, 177, 1125, 1311, 1320, 1989, 1994, 2676, 3254, 3882, 4535
Oryza. Rice, 524, 1693–5, 1709, 1719, 2500, 2998–3000, 3003, 4238–40, 4255, 4257
Papaver. Poppy, 3277
Phaseolus, 1035, 2364, 2671, 3511–2, 3962, 4865, 4869
Phaseolus. Lima bean, 181, 1036
Physalis, 2592
Pinus. Pine, 2290
Pisum. Pea, 1047, 2671, 3523–5, 3811, 4887–8
Prunus. Cherry, 3793
Prunus. Peach, 3356
Ricinus. Castor oil plant, 2032, 3294, 3913
Rubus. Blackberry, 919
Rubus. Raspberry, 4594
Saccharomyces, 1065, 2408, 2491, 2520, 3552
Salvia. Sage, 4908
Secale. Rye, 368, 375
Sesamum. Sesame, 3297, 3913
Solanum. Egg plant, 3879, 3885
Solanum. Potato, 669, 1825–6, 1828–9, 1831–2, 3154, 3786, 3795, 4382, 4403–5
Sorghum, 1309, 1430, 2988, 3930, 4229
Sorghum, for sugar, 4495
Spinacia. Spinach, 3478, 4813
Theobroma. Cacao, 3274, 3946
Trifolium, 3941
Trifolium. Red clover, 607–8, 3634
Genetics—*continued.*
Trifolium. Subterranean clover, 4345
Trifolium. White clover, 3096, 4341
Triticum. Wheat, 263–5, 301, 308, 313, 321–2, 345, 1313, 1337, 1431, 1522, 1542–3, 1550, 1567–8, 1576, 2480, 2492, 2668, 2815–7, 2820–5, 2833, 3620, 3632, 3868, 3895, 3939, 4028–9, 4066, 4086, 4102–3
Vegetable crops, 191
Venturia, 878, 4623
Vigna. Cowpea, 168
Viruses, 1028
Vitis, 181, 3405
Xanthomonas, 2368
Zea. Maize, 17, 146, 155, 181–2, 185, 190, 383, 433, 441, 458, 460, 1343, 1370, 1372, 1614–5, 1627, 1632, 1634, 1643, 2490, 2623, 2911, 2940, 2942–4, 2951, 2954, 3940, 3954, 4150–5, 4163–4, 4173, 4188, 4192, 4195, 4201
Zea. Popcorn, 1054–5
Genome analysis
Aegilops, 269, 3621, 4116
Agropyron, 276, 1489
Brassica. Cabbage, 2320
Brassica. Swede, 2320
Bromus, 578
Mentha, 2401
Nicotiana. Tobacco, 3874
Oryza. Rice, 1707, 4241
Secale. Rye, 271
Triticum. Wheat, 269, 276, 295, 1489, 2481, 2668, 4051
Geographical races
Abies. Fir, 954
Aegilops, 347
Agropyron, 594
Fagus. Beech, 2263
Larix. Larch, 954, 3440
Medicago, 601
Oryzopsis, 3071
Picea. Spruce, 950, 954, 963, 965, 4768
Pinus. Pine, 950, 962–3, 2287, 4759–60
Prunus. Apricot, 2128
Pseudotsuga. Douglas fir, 954, 2296
Quercus. Oak, 2263
Tsuga, 954
Vitis, 2128
Geography, 3565
Capsicum, 3280
Colchicum, 3311
Puccinia, 2955
Germination
Agropyron, 595
Alnus. Alder, 3431
Anacardium. Cashew, 1295
Andropogon, 1325
Avena. Oats, 1301
Beta, 103
Bouteloua, 1325
Fragaria. Strawberry, 3385–6, 4693
Malus. Apple, 181
Nicotiana. Tobacco, 796
Oryza. Rice, 4252–3
Panicum, 1325
Phaseolus, 175
Pinus. Pine, 1236
Rubus. Blackberry, 917
Rubus. Raspberry, 917
Secale. Rye, 237
Triticum. Wheat, 237, 2767
Gibberella
Humulus. Hop, 829
Triticum. Wheat, 322, 1541–5, 2784
Zea. Maize, 423, 465–6, 1364, 1639, 3962
Gibberellins
Allium. Onion, 1211, 2576

Gibberellins—*continued.*
Crop plants, 3991
Gossypium. Cotton, 173
Zea. Maize, 2485
Ginkgo
Meiosis, 2285
Sex, 4756
Sex chromosomes, 3435
Glands
Gossypium. Cotton, 1346
Glass, cultivation under
Cucumis. Cucumber, 4775
Lycopersicon. Tomato, 4775
Glasshouse, *see* glass, cultivation under
Glomerella
Biotypes, 3481, 3485
Citrullus. Water melon, 2675, 4824
Cucumis. Cucumber, 1270, 4833
Lupinus. Lupin, 3041
Gluconic acid
Aspergillus, 2406
Glucose
Nicotiana. Tobacco, 798
Glutamic dehydrogenase, 9–10, 3649
Glycine. Soya bean
Ascorbic acid, 1041
Breeding, 110, 1277, 2374, 2378, 3933, 4874, 4876, 4879, 4882
Colchicine, 132
2,4-D, 2677
Dominance, 3518
Flower, 2664, 3520
Genetics, 1043, 2375, 3520
Grafting, 1042
Growth period, 2376, 3519, 4881
Harvesting, 3933
Heterodera, 3522, 4876
Hybridization, 1295, 4875
Inheritance of acquired characters, 1042
Linolenic acid, 2377
Lodging, 4882
Mutation, induced, 2699
Neutrons, 1339, 2699
Photoperiodism, 4881
Phytophthora, 1043, 2379
Pseudomonas, 4882
Quality of product, 1041, 2377, 2664
Quantitative characters, 1339, 2375
Shedding, 3520, 3933
Sowing, 2378
Statistics. Experimental designs, 1039
Statistics. Genetics, 2375
Variation, 1339
Varieties, 1040, 2026, 2667, 2677, 2707
Variety trials, 2660, 4877–8, 4880
X-rays, 1339, 2699
Yield, 2378
Glycolic acid oxidase
Triticum. Wheat, 4104
Goat grass, *see Aegilops*
Gooseberry, *see Ribes*
Gossypium. Cotton, 2429
Amitosis, 1872
Amphidiploidy, 4445
Anatomy, 1386
Aneuploidy, 1373, 1866
Anthonomus, 737–9, 2675
Aphids, 3960
Breeding, 121–2, 133, 713–6, 725, 731, 733–5, 737, 1264, 1285–6, 1288–9, 1292, 1296, 1328, 1346, 1351, 1419, 1845–54, 1863, 1878–80, 1883, 1885, 1887, 2658, 3169, 3171–4, 3176–85, 3188–90, 3910, 3956, 4427–33, 4435–7, 4454, 4459
Centromere, 4453
Chimeras, 1172

Gossypium. Cotton—*continued.*
Chromosome aberrations, 1870
Chromosome number, 3192
Climate, 1854
Colchicine, 2664
Colour, 1869
Complex loci, 3200
Cystine, 4463
Development, 4454
α, β-Dichloroisobutyrate, sodium, 1856, 4438–9
Earias, 4424
Embryology, 4441
Empoasca, 3174, 3177
Endosperm, 1872
Eryophyes, 736
Fertilization, sexual, 3202
Fruit, 725, 3177
Fusarium, 1846–7, 1883–4, 3182, 3211–2, 3957, 4424, 4460–3
Genetics, 717, 737–9, 1847, 1869, 1873, 1881, 1890, 3170, 3177, 3957, 4424, 4440, 4446, 4457
Gibberellic acid, 173
Glands, 1346
Gossypol, 1346, 3957
Growth period, 725, 1414, 4460
Habit, 3193, 4440
Hairs, 737, 739, 1873, 3177
Haploidy, 3203
Harvesting, 2660
Heterodera, 2664
Heterosis, 123, 2652
History and evolution, 4458
Hybridization, 1847, 1856–7, 2664, 3843, 3918, 4438–9, 4460
Hybridization, interspecific, 123–4, 182, 719–21, 1172, 1287, 1340, 1847, 1857, 1865, 1870, 1882, 2652, 2655, 2664, 3176–7, 3192, 3202, 3957, 4440–4, 4446
Inflorescence, 1871
Interference, 1855
Introduction, plant, 731, 1276, 4444, 4458
Leaf, 1858, 4446
Lethals, 3191, 3200
Linkage, 718, 1340
Meiosis, 1373, 4453
Meloidogyne, 3960
Mičurinism, 732, 1414, 4455, 4460
Morphology, 1870
Multiple genes, 3191
Mutation, induced, 3918
Mutation, spontaneous, 1858, 3193
Ovule, 4442
Pathology, 733
Paurocephala, 2664
Pellicularia, 3181
Platyedra, 182
Pococera, 3960
Pollen, 1869
Pollination, 93, 1868, 4455
Polyembryony, 3203
Polyploidy, 1386, 1865, 2664
Photoperiodism, 711, 1890
Quality of product, 157, 182, 727–31, 1263–4, 1847, 1864, 1874–82, 1884, 1886, 2648, 2658, 2664, 3177–8, 3190, 3204–10, 3212, 4436–7, 4443, 4446, 4456–7
Quantitative characters, 3177, 4457
Radioactive isotopes, 93
Seed, 3177
Segregation, 721, 4445
Selection, artificial, 132, 2678, 4425, 4447
Shedding, 1867, 3201
Statistics. Experimental designs, 4426
Statistics. Genetics, 1328, 4425, 4447, 4457
Sterility, fertility, 1865
Sterility, male, 1856, 3918, 4438–9
Stomata, 726

Gossypium. Cotton—*continued*.
Thrips, 1887
Toxic soils, 732, 1419, 3176
Translocation, 724, 1865, 3200
Varieties, 722–3, 1859–64, 3194–9, 3212, 4448–52, 4946
Variety trials, 157, 712, 1276, 1888–9, 2661–2, 3175, 3186–7, 3199, 4424, 4434
Verticillium, 121–2, 734–5, 1885–6, 3171, 3957
Viruses, 3177
Xanthomonas, 122, 1296, 1846–7, 1887, 2660, 3170–1, 3173, 3177, 3179, 4424, 4459–60
X rays, 724, 3210, 3918
Gossypol
Gossypium. Cotton, 1346, 3957
Gourd, *see Cucurbita*
Graft hybridization, *see* hybridization, graft
Grafting
Capsicum, 2670
Fagopyrum. Buckwheat, 2876
Glycine. Soya bean, 1042
Juglans. Walnut, 2164
Lycopersicon. Tomato, 1020, 2355, 2358
Malus. Apple, 879, 881, 3332, 3336, 4592, 4598
Persea. Avocado, 2181
Phaseolus, 1042
Picea. Spruce, 2253
Pinus. Pine, 96
Poncirus, 3365
Prunus. Apricot, 885
Prunus. Cherry, 887–8, 3793
Prunus. Peach, 889
Solanum. Potato, 680, 702, 1807
Stone fruits, 4589
Vitis, 939, 2208, 2212–9, 2222, 3401, 3406–7, 4720
Grain, *see* caryopsis *and* seed
Gram, *see Cicer*
Grama, *see Bouteloua*
Grape, *see Vitis*
Grapefruit, *see Citrus*
Grasses
Anatomy, 1738, 4278
Aneuploidy, 4276
Apomixis, 1732, 4277
Biochemistry, 3051
Breeding, 539, 541–3, 546, 549–51, 1244, 1259–60, 1726, 1733, 2680, 3031, 3052, 3936, 4272, 4275
Centres of origin, 538
Chromosome biochemistry, 1734
Chromosome morphology, 565
Chromosome number, 561, 564, 1735–6, 2664, 3048, 3873
Colchicine, 1731
Ecotypes, 3789
Embryo, 3054
Embryology, 4277
Flower, 3052
Hairs, 1739
Heterosis, 545
History and evolution, 4278
Hybridization, interspecific, 2607
Leaf, 4278
Melolontha, 1272
Mičurinism, 558–9
Mutation, induced, 2704, 3030, 3045
Nucleolus, 1737
Ophiobolus, 1546
Photoperiodism, 3052
Pollination, 567
Polyploidy, 1731, 3050
Population genetics, 3786
Quality of product, 1733, 3031, 3053
Radiation, 3030, 3045
Root, 1739
Seed production, 2428
Sterility, fertility, 568
Taxonomy, 561, 567, 1734–9, 3054, 3873, 4278
Grasses—*continued*.
Temperature, effect of, 3052
Variation, 1727, 3789
Varieties, 560
Variety trials, 1724–5, 2671, 3019–20, 3033, 3047, 4273–4
X rays, 2704
γ rays, 200, 202, 1377, 2607, 3626, 3696, 3824
Avena. Oats, 349
Brassica. Brussels sprouts, 4584
Brassica. Cabbage, 4584
Crop plants, 1398, 2600
Hordeum. Barley, 349
Lespedeza, 3957
Linum. Linseed, 4570
Nicotiana. Tobacco, 792
Oryza. Rice, 516
Trifolium. Alsike clover, 3957
Trifolium. Crimson clover, 3957
Triticum. Wheat, 3892–3, 4055
Zea. Maize, 1345, 1375, 3972
Greenhouse, *see* glass, cultivation under
Groundnut, *see Arachis*
Growth, *see* development
Growth period, 3689
Acer, 3246
Allium. Onion, 2300, 3464
Andropogon, 586
Arachis. Groundnut, 4668–9
Beta. Beetroot, 4770
Brassica. Brussels sprouts, 1270
Brassica. Cabbage, 3472
Brassica. Cauliflower, 1270
Carthamus. Safflower, 1342
Cereals, 1265, 4000, 4004–5
Cicer. Chickpea, 1051
Cucumis. Cucumber, 3445, 4775
Cucumis. Melon, 987
Ductylis, 3955, 4281
Eleusine, 3594
Fagus. Beech, 2253
Ficus. Fig, 117, 2077
Forest trees, 2269
Glycine. Soya bean, 2376, 3519, 4881
Gossypium. Cotton, 725, 1414, 4460
Hordeum. Barley, 232, 2502, 2639, 2963, 2971, 3886
Lathyrus, 1051
Lolium, 3786
Lupinus. Lupin, 1788
Lycopersicon. Tomato, 1259, 1270, 2300, 2359, 3446, 3490, 4775–6
Malus. Apple, 4589, 4595, 4598
Mentha, 3544
Nicotiana. Tobacco, 797, 1992–3, 4533
Oryza. Rice, 520, 529, 1264, 2500, 2997, 3000, 4254–5, 4263
Pennisetum, 511
Phleum, 4282
Pinus. Pine, 98
Pisum. Pea, 1048
Poa, 540
Prunus. Almond, 2077
Prunus. Apricot, 3328
Prunus. Peach, 2150, 2152, 3359
Rubus. Raspberry, 4594
Ribes. Red currant, 4596
Saccharum. Sugar cane, 1907–8, 1917, 4492
Sesamum. Sesame, 2660
Setaria, 2986
Solanum. Potato, 687, 1245, 1259, 1364, 1805, 4394
Sorghum, 2671
Trifolium, 606
Trifolium. Subterranean clover, 4345
Triticum. Wheat, 299, 1414, 1481, 1509, 1512–4, 1574, 2626, 2768–70, 4006, 4056, 4058–60, 4079
Vegetable crops, 4781

Growth period—*continued.*
Vitis, 938, 2076
Zea. Maize, 185, 232, 433, 452, 464, 1628, 1638, 2725, 3818, 3940, 4166, 4185
Zea. Sweet corn, 2396
Guignardia
Vitis, 181
Guizotia, 3913
Varieties, 3286, 4560
Gynecium, *see* flower

HABIT
Acer, 3246
Brassica. Brussels sprouts, 3453
Cucurbita, 993
Cucurbits, 993, 2332
Gossypium. Cotton, 3193, 4440
Lolium, 3786
Lotus. Birdsfoot trefoil, 3114
Lycopersicon. Tomato, 4836
Medicago, 2676
Picea. Spruce, 2294
Populus. Poplar, 4747
Prunus. Cherry, 3793
Rubus. Raspberry, 4594
Sesamum. Sesame, 2679
Solanum. Egg plant, 993
Triticum. Wheat, 264, 1576, 2750, 4115
Zea. Maize, 433, 447, 1623, 4167
Hairs
Avena. Oats, 2893
Cicer. Chickpea, 3534
Gossypium. Cotton, 737, 739, 1873, 3177
Grasses, 1739
Rubus. Raspberry, 4594
Triticum. Wheat, 2773
Haploidy, 1216, 3952
Aegilops, 297
Citrullus. Water melon, 4823
Cucumis. Cucumber, 4830
Gossypium. Cotton, 3203
Nicotiana. Tobacco, 795
Oryza. Rice, 1707
Poa, 1382, 4279
Populus. Poplar, 2272
Solanum. Potato, 4377–8
Triticum. Wheat, 297
Zea. Maize, 451, 4182–3
Harmolita
Biotypes, 1680
Hordeum. Barley, 3937
Harvesting
Cereals, 2730
Glycine. Soya bean, 3933
Gossypium. Cotton, 2660
Sorghum, 2660
Hawthorn, *see Crataegus*
Haynaldia
Polyploidy, 4303
Hazel, *see Corylus*
Heading broccoli, *see Brassica*
Heat, drought, resistance
Acer, 3246
Avena. Oats, 323, 359–60
Brassica. Cabbage, 2300, 3856
Cereals, 4011
Chloris, 2660
Cicer. Chickpea, 1051
Crop plants, 214, 1421, 2715, 3925
Colocasia, 3250
Elaeis. Oil palm, 862
Fragaria. Strawberry, 2200–1
Hordeum. Barley, 3852
Lathyrus, 1051
Heat, drought, resistance—*continued.*
Lycopersicon. Tomato, 2360
Medicago, 3089, 4322
Mentha, 3547
Nicotiana. Tobacco, 4535
Ornithopus, 1730
Oryza. Rice, 531, 1716, 4261
Pinus. Pine, 1243, 4767
Populus. Poplar, 956
Rubus. Raspberry, 2083
Saccharum. Sugar cane, 3239
Sesamum. Sesame, 4567
Setaria, 2986
Solanum. Potato, 658, 2628, 3152
Sorghum, 511
Stone fruits, 117
Trifolium. Red clover, 1730
Trifolium. White clover, 4344
Triticum. Wheat, 182–3, 341, 1315, 1536–7, 2780–1, 3996
Vitis, 945, 2208, 2215–9
Zea. Maize, 122, 185, 440, 464, 2682, 2949, 3955
Heat, effect of
Fragaria. Strawberry, 4589, 4593
Hordeum. Barley, 1649
Height
Crop plants, 3991
Helianthus. Jerusalem artichoke
Hybridization, interspecific, 3301
Sclerotinia, 4789
Statistics. Experimental designs, 4787
Varieties, 2314, 4788
Variety trials, 3459
Helianthus. Sunflower
Albugo, 182
Biotypes, 3787
Breeding, 854–5, 1261, 1264, 1295, 3933
Fertilization, sexual, 2660
Hybridization, 4571
Hybridization, graft, 3300, 4573
Hybridization, interspecific, 182, 3301, 4572
Hybridization, wide, 3300
Inheritance of acquired characters, 2715
Mičurinism, 3302
Orobanche, 855, 3820, 3867
Plasmopara, 2667
Pollination, 3302
Puccinia, 182
Quality of product, 855, 1264
Seed production, 2041
Sterility, male, 4573
Translocation, 4572
Variation, 3787
Varieties, 2638, 3284
Variety trials, 2662
Vernalization, 3787
Heliothis
Zea. Maize, 1364, 4200
Zea. Sweet corn, 4906
Helium
Vicia. Broad bean, 2580
Helminthosporium
Aminoacids, 343, 501
Avena. Oats, 175, 365–6, 1338, 1341, 2792, 2893–4, 4134
Biotypes, 501, 2398, 2984, 3997
Festuca, 1433
Hordeum. Barley, 175, 497, 500–1, 1455, 3852, 3997
Selection, artificial, 343
Temperature, effect of, 2398
Zea. Maize, 122, 131, 181, 397–8, 404, 407, 410, 414, 424, 466, 468–9, 1296, 1323, 2490, 2956, 3935, 3962, 4163
Zea. Sweet corn, 175, 2398
see also Cochliobolus and Pyrenophora

Hemileia
Coffea. Coffee, 133, 2006, 3932
Hemp, *see Cannabis*
Herbicides
Hordeum. Barley, 2873
Triticum. Wheat, 149, 2873, 4111
Heredity, *see* genetics
Hermaphroditism
Vitis, 3405, 4705
Heterocaryosis, 70, 1197, 2507, 4926
Saccharomyces, 2410
Alternaria, 4852
Aspergillus, 2406
Phytophthora, 182
Heterochromatin, *see* chromosome biochemistry
Heterodera
Beta. Sugar beet, 4517
Biotypes, 1833, 4416
Cereals, 1467
Glycine. Soya bean, 3522, 4876
Gossypium. Cotton, 2664
Solanum. Potato, 107, 659, 703, 1831–2, 3162–3, 3786, 3861, 4411–5
Heterosis, 53, 1126, 2538, 3630, 3803
Brassica. Cabbage, 3470–1
Beta. Sugar beet, 4509
Cajanus, 3535
Crop plants, 199, 1247, 1407, 2484, 2607
Cucumis. Melon, 987
Digitalis, 1270
Gossypium. Cotton, 123, 2652
Grasses, 545
Lupinus. Lupin, 3111, 4355
Lycopersicon. Tomato, 1260, 3491, 3793, 4779
Nicotiana. Tobacco, 788, 3252, 4524
Oryza. Rice, 1698, 3002
Phleum, 1730
Pinus. Pine, 948, 1235
Secale. Rye, 1598
Sequoia, 948
Sorghum, 2989
Trifolium. Red clover, 1730
Triticum. Wheat, 198, 2741, 2771
Vegetable crops, 997, 2304
Vitis, 2223
Zea. Maize, 26, 150, 386, 441, 1364, 2486, 2504, 2913, 4153, 4171–2
Heterostyly, 2553
Heterothallism, 90–1, 1439, 2590, 3773–4
Tilletia, 1551
Heterozygosis
Hordeum. Barley, 182
Zea. Maize, 441, 4151
Hevea. Rubber
Breeding, 2054–6, 2060, 2672, 4581
Chromosome number, 2664
Dothidella, 2054, 2060, 3314, 4581
Hybridization, interspecific, 3314
Oidium, 2054, 2060, 2664
Pellicularia, 3314
Pollination, 2664
Quality of product, 2058
Seed production, 869, 2059, 2063
Varieties, 2057, 3313
Variety trials, 2061–3, 4579–80
γ-Hexachlorocyclohexane
Lupinus. Lupin, 4358
Hibiscus
Amphidiploidy, 3223.
Breeding, 3220, 3910, 4483
Colletotrichum, 175, 748
Embryology, 4481
Genetics, 3220
Hybridization, 1891
Hibiscus—continued.
Hybridization, interspecific, 121, 175, 747, 1891, 3220, 3222, 4481
Meiosis, 3220, 3222–3
Meloidogyne, 4483
Stem, 2660
Sterility, fertility, 122, 4481
Varieties, 4482
Viruses, 121–2
Hibiscus, as vegetable
Inbreeding, 4858
Hicoria, see Carya
Histology, *see* anatomy
History and evolution, 1206, 2582, 3750
Abies. Fir, 2295
Aegilops, 347, 3623, 4117
Aleurites. Tung, 853
Amaranthus, 3581
Andropogoneae, 4293
Avena. Oats, 1584
Beta, 624
Bothriochloa, 3064
Citrus, 4652
Crop plants, 105, 192, 1091, 2708–9, 3984
Elymus, 2482
Gossypium. Cotton, 4458
Grasses, 4278
Hordeum. Barley, 1659–60, 1662
Lespedeza, 2421
Lycopersicon. Tomato, 1018, 3140
Musa. Banana, 2653, 3388
Onobrychis. Sainfoin, 3828
Oryza. Rice, 4246–7
Papaver. Poppy, 3276
Phalaris, 4291
Platanus, 4754
Poa, 569
Populus. Poplar, 3821
Prunus. Almond, 4662
Prunus. Peach, 4648
Prunus. Plum, 2133
Pyrus. Pear, 2121
Quercus. Oak, 4740
Raphanus. Radish, 2313
Saccharum. Sugar cane, 1916. 3238
Secale. Rye, 1599, 1602, 1607, 4138
Sesamum. Sesame, 2036
Sitanion, 2482
Solanum. Potato, 3139–40, 4417
Sorghum, 1688, 1690, 2659, 4295
Spinacia. Spinach, 3477
Theobroma. Cacao, 4552
Trifolium. Minor species, 3103
Triticum. Wheat, 1508–10, 2761–2, 3623
Vitis, 935, 3403, 4707
Zea. Maize, 2427, 4179
Zizania, 2472
see also evolution, general theory
Holcus
Aneuploidy, 3073
Clines, 3073
Statistics. Genetics, 3062
Homozygosis, 3640
Sorghum, 510
Zea. Maize, 451, 1614, 1631
Hop, *see Humulus*
Hordeum. Barley
Amylose, 1666
Biotypes, 1661
Breeding, 110, 175, 229, 231, 240, 479, 502, 1246, 1294, 1297, 1455–6, 1650, 1673–4, 1680, 2628, 2667, 2720–2, 2793, 2860, 2960, 3791–2, 3800, 3907, 3937, 3955, 3962, 3994, 4003, 4213
Cacodylate, sodium, 182
Carbon dioxide, 1649

Hordeum. Barley—*continued*.
Caryopsis, 1275
Chemicals, effect of, 3917
Chlorine, 483
Chromosome aberrations, 182, 489–90, 1307, 1649, 1663–5, 2668, 2873, 2969, 4218–9
Chromosome morphology, 1662
Cicadulina, 479
Cochliobolus, 3956
Colchicine, 1297, 1649, 2726
Cold resistance, 231, 240, 1260, 2979–80, 4223
Colour, 1168, 3806
Competition, 3890
Cosmic rays, 4218
Cysteamine, 1684
2,4-DB, 219
Development, 1677
Diepoxybutane, 1168
Dioxan, 483
Enzymes, 2977–8
Erysiphe, 215, 1260, 2981, 2983, 3852, 3955, 4208
8-Ethoxycaffeine, 483
Ethylene oxide, 483, 1168
Flower, 2965
Formaldehyde, 182, 1651
Fungi, 479, 1259, 2861, 2960
γ rays, 349
Genetics, 139, 491, 498, 1661, 1667–8, 2502, 2668, 2960 2967, 2973, 2975, 2983, 4215–6
Growth period, 232, 2502, 2639, 2963, 2971, 3886
Harmolita, 3937
Heat, drought, resistance, 3852
Heat, effect of, 1649
Helminthosporium, 175, 497, 500–1, 1455, 3852, 3997
Herbicides, 2873
Heterozygosis, 182
History and evolution, 1659–60, 1662
Hybridization, 196, 1244, 1259, 1683
Hybridization, intergeneric, 182, 2964, 3616
Hybridization, interspecific, 2667, 2726, 2960, 3861
Inflorescence, 1667–8, 2975, 4222
Insects, 497, 3852
Iodine, 483
Leptosphaeria, 2960
Lethals, 182, 2962
Linkage, 182, 2495, 2963, 2970, 2975
Lodging, 241, 480, 497, 1364, 1464, 2639, 2960, 4129, 4208
MCPB, 219
Meiosis, 3619
Mičurinism, 4006
Mutation, 40, 1675, 2965
Mutation, induced, 119, 182, 480–3, 1168, 1307, 1649, 1651, 1653–5, 1663, 1665, 1684, 2873, 2966–7, 2973, 3791, 3917
Mutation, spontaneous, 1652, 2963, 3806
Nebularine, 483
Neutrons, 349, 2721
Nitrogen, 1665, 2969, 4219
Nitrogen mustard, 483
Nucleolus, 1662
Nutrients, 3890
Oscinella, 1272
Oxygen, 1665, 2969, 4219
Plastids, 40
Photoperiodism, 2502, 2974
Pollen, 493
Pollination, 1349
Polyploidy, 119, 1273, 1297, 2960, 3619
Puccinia, 499, 1466, 1566, 1678, 2848
Pyrenophora, 2667, 2983
Quality of product, 472–3, 494–7, 1246, 1364, 1669–74, 2960–1, 2976–8, 3997, 4006, 4008, 4204–5, 4220–1
Quantitative characters, 1668, 4215–6
Radiation, 182, 2695, 2720
Hordeum. Barley—*continued*.
Rhynchosporium, 1455, 2985, 3956
Seed storage, 2960
Selection, artificial, 1656, 2960, 4215–6
Septoria, 2667, 4208
Shedding, 491, 497
Soil pH, 3996–7
Statistics. Experimental designs, 106
Statistics. Genetics, 1656
Sterility, female, 2973
Sterility, fertility, 182, 349, 483, 492, 2972
Streptomycin, 182
Taxonomy, 1675, 3596, 3599, 4222
Temperature, effect of, 482, 499, 2974
Tillering, 2721
Translocation, 119, 182, 2495, 2963, 2970
Urethane, 182
Ustilago, 139, 497, 1677, 2668, 2678, 2960, 3861, 3956
Variation, 196, 3886
Varieties, 114, 119, 182, 207, 471, 484–8, 497, 1457, 1657–8, 2629, 2642–3, 2959, 2968, 3852, 3997, 4217
Variety trials, 108, 230, 475–8, 1448, 1468, 1681–3, 2614, 2645, 2957–8, 2960–1, 4204, 4207–12, 4214
Viruses, 502, 1364, 2972
Vernalization, 2502, 2980
X rays, 119, 481–2, 489–90, 1307, 1649, 1653–5, 1663–5, 1684, 2962, 2966, 2969–70, 2973, 3791, 3917
Yield, 1676, 2960, 3997
Hormones
Crop plants, 3927
Cucumis. Cucumber, 999
Pisum. Pea, 3811
Ribes. Black currant, 3380
Ribes. Red currant, 3380
Horse bean, *see Vicia*
Humulus. Hop
Breeding, 821, 2014, 4590
Fungi, 829
Fusarium, 829
Gibberella, 829
Hybridization, graft, 2016
Mutation, induced, 2014
Nutrients, 830
Polyploidy, 2014
Pseudoperonospora, 824–5, 831, 2017
Quality of product, 828–9, 2015–6
Sex chromosomes, 827, 4554
Taxonomy, 3278
Variation, 3278
Varieties, 826, 829, 2013–4, 2017
Variety trials, 822–5, 2018–9
Verticillium, 4590
X rays, 2014
Yield, 822
Hybrid vigour, *see* heterosis
Hybridization, 196, 2537, 3614, 3645, 3780
Agropyron, 1326, 3028
Allium. Onion, 2315, 2669, 2677, 3958, 4770, 4794
Arachis. Groundnut, 2664
Avena. Oats, 1593, 2728, 3790, 4128
Beta. Mangel, 626, 1796
Beta. Sugar beet, 626, 782, 1260, 1967, 3786, 4515
Brassica. Cabbage, 3472, 3786
Brassica. Cauliflower, 3786
Brassica. Brussels sprouts, 4770
Brassica. Kale, 3786
Brassica. Kohl rabi, 3786
Brassica. Mustard, 3480
Brassica. Rape, 1260, 3786
Brassica. Sprouting broccoli, 3786
Brassica. Swede, 626, 2630
Bromus, 574–5
Cajanus, 3535
Capsicum, 2670
Carthamus. Safflower, 1342

Hybridization—*continued.*
Casuarina, 4753
Ceratostomella, 4751
Cereals, 196, 2668
Citrullus. Water melon, 2337
Coffea. Coffee, 2664
Cocos. Coconut, 905
Crop plants, 2686
Cucumis. Cucumber, 996–8, 1297, 2342, 2630, 3487, 4779, 4827–8
Cucumis. Melon, 2333
Dactylis, 3026, 3786, 4281
Echinochloa, 3593
Elaeis. Oil palm, 860, 2664, 3306, 4722
Fagopyrum. Buckwheat, 1577–8, 2875
Festuca, 177
Glycine. Soya bean, 1295, 4875
Gossypium. Cotton, 1847, 1856–7, 2664, 3843, 3918, 4438–9, 4460
Helianthus. Sunflower, 4571
Hibiscus, 1891
Hordeum. Barley, 196, 1244, 1259, 1683
Juglans. Walnut, 2162
Leguminous forage crops, 1756
Linum. Flax, 1260, 1894, 3959
Linum. Linseed, 1260
Lolium, 3059
Lotus. Birdsfoot trefoil, 4360
Lycopersicon. Tomato, 1004–6, 1015, 2347, 2360, 3443, 3490, 3495–6, 3499, 3792, 4837
Malus. Apple, 3332, 4613, 4621
Medicago, 3023, 3083–4, 4306
Nicotiana. Tobacco, 788, 1298, 1350, 1986, 3252, 4523, 4536
Onobrychis. Sainfoin, 1756
Oryza. Rice, 530, 1698, 2664, 3870–1, 3902, 4257, 4269
Papaver. Poppy, 3818
Pennisetum, 511, 3902, 4228
Phaseolus, 2670, 3506
Prunus. Apricot, 2082, 3328
Prunus. Cherry, 4632
Prunus. Peach, 2146–7
Prunus. Plum, 4638
Ribes. Black currant, 3380
Ricinus. Castor oil plant, 2033, 3295–6
Saccharum. Sugar cane, 1911
Secale. Rye, 379, 1348, 1597
Solanum. Egg plant, 1270
Solanum. Potato, 650, 1260, 1364, 3786
Sorghum, 2989, 3067, 3957, 4230–1
Spinacia. Spinach, 3238, 3818
Theobroma. Cacao, 2011
Trifolium. Minor species, 3103
Trifolium. Red clover, 609, 3027
Triticum. Wheat, 302, 314, 329, 1273, 1576, 2670, 2728
Vegetable crops, 191
Vigna. Cowpea, 3232
Vitis, 940, 2208, 2221, 3399
Zea. Maize, 110, 177, 181, 386–94, 425, 432–40, 454, 461, 469, 1244, 1259–61, 1263, 1282, 1294, 1296, 1321, 1324, 1364–5, 1616–23, 1631, 1633, 1638, 2626, 2628, 2667, 2670–1, 2674, 2676, 2907, 2914–33, 2935, 2945, 2949–50, 3818, 3902, 3909, 3931–3, 3955, 3957–8, 3995, 4142, 4158–62, 4165–70, 4190, 4199
Zea. Popcorn, 2399, 3539
Zea. Sweet corn, 2674, 3537, 3958
Zoysia, 4292
Hybridization, graft, 2558, 3715–6
Agropyron, 3820
Avena. Oats, 1580
Capsicum, 3714
Cereals, 3820
Crop plants, 205
Cucumis. Melon, 4819
Hybridization, graft—*continued.*
Cucurbita, 4819
Cyphomandra, 2353, 3493
Elymus, 1493
Fruit crops, 2084
Helianthus. Sunflower, 3300, 4573
Humulus. Hop, 2016
Ipomoea. Sweet potato, 2648
Linum. Flax, 4470
Lupinus. Lupin, 1783, 4356
Lycopersicon. Tomato, 1013–4, 1025, 1809, 2351–4, 3493, 3503, 3842, 4846, 4856
Oryza. Rice, 2648
Pisum. Pea, 2380–2, 2387
Pyrus. Pear, 3341
Solanum. Egg plant, 3503, 4856
Solanum. Potato, 1809, 3160, 3717
Triticum. Wheat, 283, 1493, 2747, 3844, 4045, 4057
Vicia. Broad bean, 2380
Zea. Maize, 2648
Hybridization, intergeneric, 1133
Aegilops, 184, 269–70, 297, 1260, 1482, 3623, 3868–9, 4036–8
Agropyron, 182, 276–8, 1260, 1408, 1425, 1488–91, 1933, 2625, 2667, 2745, 2805, 2809, 2818–9, 2834, 3028, 3632, 3869, 4042–3
Bothriochloa, 3044
Brassica. Cabbage, 1270
Brassica. Turnip, 1270
Cajanus, 4903
Coix, 3902
Crotalaria, 4359
Cydonia. Quince, 4589
Dichanthium, 3044
Elymus, 182, 2482, 2964, 3028, 3616
Erianthus, 3227
Euchlaena, 442
Festuca, 177, 1726, 2676 3031
Hordeum. Barley, 182, 2964, 3616
Juglans. Walnut, 948
Lolium, 1726, 2676, 3031
Malus. Apple, 877, 1270, 4589, 4606
Miscanthus, 2496
Oryzopsis, 1754
Pyrus. Pear, 877, 2080, 4589, 4606
Saccharum. Sugar cane, 2475, 2496, 3227
Sclerostachya, 3227
Secale. Rye, 110, 175, 271–5, 1425, 1479, 1483–7, 1937, 2453, 2473, 2625, 2628, 2744, 3989, 4033, 4039–41, 4114
Sitanion, 2482
Sorghum, 3227
Stipa, 1754
Tripsacum, 1624, 2934
Triticum. Wheat, 110, 184, 269–78, 297, 1260, 1263, 1273, 1408, 1425, 1473, 1479, 1482–91, 1933, 1937, 2453, 2473, 2625, 2667–8, 2743–5, 2778, 2805, 2809–10, 2818–9, 2834, 3623, 3868–9, 3989, 4032–3, 4035–43, 4106, 4114
Zea. Maize, 442, 1624, 2475, 2934
Hybridization, interspecific, 1440, 3561, 3642, 3781, 3794
Abies. Fir, 2295
Acacia, for tanning, 2045, 4576
Aegilops, 346, 4032
Agave, 751
Agropyron, 3616
Agrostis, 3786
Aleurites. Tung, 175
Allium, 976
Alnus. Alder, 950, 2260, 2279, 3430–1
Arachis. Groundnut, 182, 1279, 4667, 4671
Beta, 1944
Avena. Oats, 136, 182, 1589, 2477, 2667, 2726, 2893
Beta. Beetroot, 2639
Beta. Sugar beet, 1259–60, 1960, 2639

Hybridization, interspecific—*continued.*
Betula. Birch, 948
Bothriochloa, 557, 3044
Brassica. Cabbage, 2320, 3291, 3453
Brassica. Indian mustard, 840
Brassica. Rape, 2031
Brassica. Swede, 2320, 3453
Brassica. Toria, 840
Brassica. Turnip, 119, 3291, 3786
Bromus, 576–7, 4284
Cajanus, 1282
Capillipedium, 557
Capsicum, 2670, 3279–80
Carthamus. Safflower, 1302, 4574
Castanea. Chestnut, 2628
Cicer. Chickpea, 4900
Citrullus. Water melon, 3875
Citrus. Lemon, 3367
Citrus. Grapefruit, 4654
Citrus. Orange, 4654
Coffea. Coffee, 133, 2006, 2664
Colchicum, 3312
Corchorus. Jute, 1900, 3220
Corylus. Hazel, 2081
Crotalaria, for fibre, 1296
Cucurbita, 994, 3965
Dichanthium, 557
Digitaria, 589
Elaeis. Oil palm, 2664
Elymus, 4302
Eucalyptus, 2281–2
Forest trees, 3416
Fragaria. Strawberry, 2197, 3793
Gossypium. Cotton, 123–4, 182, 719–21, 1172, 1287, 1340, 1847, 1857, 1865, 1870, 1882, 2652, 2655, 2664, 3176–7, 3192, 3202, 3957, 4440–4, 4446
Grasses, 2607
Helianthus. Jerusalem artichoke, 3301
Helianthus. Sunflower, 182, 3301, 4572
Hevea. Rubber, 3314
Hibiscus, 121, 175, 747, 1891, 3220, 3222, 4481
Hordeum. Barley, 2667, 2726, 2960, 3861
Ipomoea. Sweet potato, 3912
Juglans. Walnut, 2162, 2164, 3323–4
Larix. Larch, 950, 2264
Lathyrus, 621
Lolium, 177, 3061, 3861, 4286
Lupinus. Lupin, 618, 1782, 1785–6, 3109, 4356
Lycopersicon. Tomato, 122, 1007–10, 1270, 2348, 2358, 2639, 2678, 2682, 3446, 3492
Malus. Apple, 182, 2102, 2669, 4595
Manihot. Cassava, 129, 785, 3247, 3912
Medicago, 119, 1756, 1762
Melilotus. Sweet clover, 137, 4347, 4352–3
Mentha, 2401–2, 3545–6
Musa. Banana, 2206, 2653, 2657, 2664
Musa, for fibre, 750, 1902
Nicotiana. Tobacco, 177, 792, 1987–90, 1997–9, 2675–7, 3251, 3253–4, 3874, 4525–6
Oryza. Rice, 3003, 4241, 4249
Pachyrrhizus, 623
Passiflora, 2682
Pelargonium, 4556
Pennisetum, 132, 1290, 3902
Phalaris, 182
Phaseolus, 175, 1032, 2367, 2639, 2670, 3507–8, 3862, 4583
Physalis, 3453
Pinus. Pine, 1235, 2251, 2291, 3436–7, 4735
Poa, 142, 540, 3948
Populus. Poplar, 948, 950, 956, 2275–6, 3324, 3423–4, 3426–7, 4724, 4743, 4746
Prunus. Almond, 2626, 4661, 4663
Prunus. Cherry, 4601, 4640–1
Prunus. Peach, 3965, 4632
Hybridization, interspecific—*continued.*
Prunus. Plum, 886, 2081, 2129, 2133, 2139, 3965, 4601
Pyrus. Pear, 2121
Quercus. Oak, 3419
Ribes, 4589, 4597
Ribes. Black currant, 2083, 4584, 4594
Ribes. Gooseberry, 2083, 4594
Ribes. Red currant, 3380, 4584
Rubus, 175, 912–4, 2075, 2183, 2669, 4597, 4683
Rubus. Blackberry, 2080
Rubus. Raspberry, 2080, 4594, 4684
Sambucus. Elder, 2669
Saccharum. Sugar cane, 765–6, 1912, 3227, 3915
Salix. Willow, 182, 3324
Secale. Rye, 1599, 3848
Solanum. Potato, 107, 629, 637–8, 641, 650, 659–60, 663–5, 669, 671, 678–80, 697, 701, 704, 1259–60, 1805, 1807, 1813, 1827, 1832, 1835, 2577, 2628, 2633–4, 2667, 2671, 3130–3, 3142, 3795, 3852, 3854, 3960, 4377–8, 4380, 4385–6, 4392–3, 4399, 4405, 4415, 4419–20
Sorghum, 122, 158, 511, 557, 586–7, 1688, 3068, 4232
Sorghum, for sugar, 587
Stone fruits, 4589
Thea. Tea, 4541
Trifolium, 2676
Trifolium. White clover, 3096
Triticum. Wheat, 122, 268, 303–4, 1273, 1479–81, 1522, 1537, 1574, 2473, 2625, 2742, 2783, 2801, 3962, 3989, 4033–4
Ulmus. Elm, 4752
Ustilago, 4130
Vanilla, 2022
Vicia. Vetch, 3042
Vitis, 181, 945–6, 3392–3, 3408, 4698
Yucca, 1901
Zizania, 2472
Hybridization, wide
Cannabis. Hemp, 1891
Cereals, 3664
Crop plants, 1408, 3321, 3966
Cucurbita, 993
Forest trees, 3324
Helianthus. Sunflower, 3300
Juglans. Walnut, 3323
Phaseolus, 4355
Prunus. Apricot, 3341, 4632
Prunus. Plum, 4632
Ribes. Black currant, 2083, 2188
Sequoia, 948
Solanum. Egg plant, 993
Triticum. Wheat, 1539
Zea. Maize, 1334
Hydrogen
Vicia. Broad bean, 2580
Hydrogen peroxide, 3710
Hydrogen sulphide
Oryza. Rice, 4264
Vicia. Broad bean, 4861
Hydroperoxides, 4926
Hypochlorite, sodium
Nicotiana. Tobacco, 796
Hypomyces
Biotypes, 4867
Hypostasis, *see* epistasis

IDIOGRAM, *see* chromosome morphology
Immunology, *see* serology
Inbreeding
Allium. Onion, 972
Brassica. Brussels sprouts, 4770
Brassica. Mustard, 3479
Cannabis. Hemp, 3219, 4474
Hibiscus, as vegetable, 4858

Inbreeding—*continued.*
Larix. Larch, 2264
Medicago, 13, 3081, 4324
Prunus. Peach, 3356
Pseudotsuga. Douglas fir, 3441
Rubus. Raspberry, 4594
Solanum. Potato, 650, 658, 681
Theobroma. Cacao, 2011
Zea. Maize, 140, 156, 443–4, 2935
Incompatibility, *see* sterility, fertility
Indigofera
Chromosome number, 1757
Indole-3-acetic acid, 74
Pisum. Pea, 1045
Indole-3-butyric acid
Citrus. Lemon, 892
Inflorescence
Agropyron, 4305
Avena. Oats, 358, 2888
Brachypodium, 4305
Gossypium. Cotton, 1871
Hordeum. Barley, 1667–8, 2975, 4222
Oryza. Rice, 2648, 3000
Ribes. Black currant, 4594
Rubus, 2184
Secale. Rye, 1937
Sorghum, 3933
Trifolium, 3941
Triticum. Wheat, 304, 1521–4, 1937, 4065–6, 4072, 4086
Vitis, 4717
Zea. Maize, 1635, 2623, 2648, 4166
Infrared rays, 148, 4926
Inheritance, *see* genetics
Inheritance of acquired characters, 3719–20
Crop plants, 2715
Glycine. Soya bean, 1042
Helianthus. Sunflower, 2715
Linum. Flax, 4468
Phaseolus, 1042
Inhibitors
Oryza. Rice, 3001
Intensifiers, *see* modifiers
Interchange, *see* translocation
Interference, 1132, 2536, 3729
Gossypium. Cotton, 1855
Intergeneric hybridization, *see* hybridization, intergeneric
Internal tuber necrosis
Solanum. Potato, 672–3
Interspecific hybridization, *see* hybridization, interspecific
Introduction, plant, 196
Abutilon, 3220
Beta. Sugar beet, 1276
Bouteloua, 4301
Cannabis. Hemp, 4477
Capsicum, 3281
Citrullus. Water melon, 3867
Citrus, 3328
Crop plants, 210–1, 213, 1253, 1415–7, 2649, 2711–2, 3320–2, 3576, 3922–4, 3946, 3987
Crotalaria, 3220
Daucus. Carrot, 971
Dioscorea. Yam, 4521
Fragaria. Strawberry, 4694
Fruit crops, 3320, 3324, 3923
Gossypium. Cotton, 731, 1276, 4444, 4458
Leguminous forage crops, 3586
Linum. Flax, 3217
Medicinal plants, 2047
Nicotiana. Tobacco, 2675
Oryza. Rice, 2999, 3010–1
Persea. Avocado, 2181, 4679–80
Pome fruits, 3328
Prunus. Almond, 3328
Prunus. Apricot, 3328
Introduction, plant—*continued.*
Prunus. Peach, 3328
Pulses, 3586
Saccharum. Sugar cane, 1922, 3227, 3233
Secale. Rye, 376, 1606–7
Setaria, 2986, 3820
Solanum. Egg plant, 3504
Solanum. Potato, 641, 1821
Trifolium. Minor species, 1777
Triticum. Wheat, 265, 315–6, 1532, 2677, 3852–3, 4074
Vegetable crops, 3923
Vicia. Vetch, 1778
Vitis, 944
Zea. Maize, 422, 433, 1648, 2946
Inversion, *see* translocation
Iodine
Hordeum. Barley, 483
Iodoacetamide
Allium. Onion, 3768
5-Iodouracyl, 1166
Ipomoea. Sweet potato
Ascorbic acid, 709
Breeding, 1277, 3912, 3957
Biochemistry, 2092
Carotene, 709
Carotenoids, 164
Chromosome number, 3912
Hybridization, graft, 2648
Hybridization, interspecific, 3912
Mičurinism, 1841
Mutation, induced, 3912
Nutrients, 1844
Oxidase, 3955
Polyploidy, 3912
Quality of product, 162, 710, 2670, 3168, 3955
Size, 2648
Statistics. Experimental designs, 3166
Sterility, fertility, 3912, 4423
Temperature, effect of, 163
Varieties, 1842–3, 3167, 3960–1, 4421–2
Variety trials, 709, 2670–1
Water, effect of, 1844
X rays, 3912
Irrigation
Avena. Oats, 238
Cereals, 238
Triticum. Wheat, 238
Vigna. Cowpea, 165
Zea. Maize, 439
Isariopsis
Phaseolus, 1364, 3962
Iseilema
Chromosome number, 3065
Isoamyl alcohol
Allium. Onion. 2316

JAROVIZATION, *see* vernalization
Jerusalem artichoke, *see Helianthus*
Job's tears, *see Coix*
Juglans. Walnut
Cold resistance, 948, 3323
Grafting, 2164
Hybridization, 2162
Hybridization, intergeneric, 948
Hybridization, interspecific, 2162, 2164, 3323–4
Hybridization, wide, 3323
Phytophthora, 2164
Quality of product, 2163
Sterility, fertility, 2162
Varieties, 2162–3, 3369
June yellows
Fragaria. Strawberry, 2198, 4584
Jute, *see Corchorus*

KABATIELLA
Biotypes, 554
Trifolium. Red clover, 554, 2667, 3027
Kaki, *see Diospyros*
Kale, *see Brassica*
Karyotype, *see* chromosome morphology
Karyokinensis, *see* cell division
Karyology, *see* nucleus
Keeping quality, *see* quality of product
Kenaf, *see Hibiscus*
Kidney bean, *see Phalaris*
Kidney vetch, *see Anthyllis*
Kinetin, 74
Allium. Onion, 2576
Kinetochore, *see* centromere
Knotgrass, *see Paspalum*
Kohl rabi, *see Brassica*
Kok saghyz, *see Taraxacum*
Kola, *see Cola*
Kotochalia
Acacia, for tanning, 2045
Krypton
Vicia. Broad bean, 2580

LACTUCA. Lettuce
Breeding, 2626, 2674, 4770, 4814
Mutation, spontaneous, 2330
Pellicularia, 2330
Pollination, 4817
Stem, 2330
Varieties, 2639, 3449, 4815–6
Variety trials, 2308, 2329
Viruses, 4770
Lagenaria
Polyploidy, 2337
Lamarckism, *see* inheritance of acquired characters
Land races
Malus. Apple, 2088
Prunus. Cherry, 4644
Pyrus. Pear, 2088
Larch, *see Larix*
Larix. Larch
Breeding, 949
Geographical races, 954, 3440
Hybridization, interspecific, 950, 2264
Inbreeding, 2264
Mixoploidy, 2248
Photoperiodism, 954
Quality of product, 949
Serology, 1237
Lateness, *see* growth period
Lathyrus
Chromosome number, 1757
Growth period, 1051
Hybridization, interspecific, 621
Heat, drought, resistance, 1051
Polyploidy, 622
Lavender, *see Lavandula*
Lavandula
Breeding, 2046
Varieties, 4555
Layouts, *see* statistics, experimental designs
Lead
Festuca, 583, 3786
Leaf
Acacia, for tanning, 2045, 4576
Alnus. Alder, 2280
Betula. Birch, 2278
Brassica. Kale, 3786
Cajanus, 4904
Cicer. Chickpea, 3532
Crop plants, 209
Fagus. Beech, 4749
Gossypium. Cotton, 1858, 4446
Leaf—*continued.*
Grasses, 4278
Malus. Apple, 1231, 3333
Nicotiana. Tobacco, 1994, 3882
Oryza. Rice, 1280
Phaseolus, 4865
Pinus. Pine, 3437
Pisum. Pea, 2386, 4887
Quercus. Oak, 4741
Sorghum, 4229
Trifolium. White clover, 1726, 3094, 4344
Leaf shrivel
Lycopersicon. Tomato, 2682
Leek, *see Allium*
Leguminous forage crops
Biochemistry, 3051
Breeding, 110, 551, 1244, 1261, 2672, 2680, 3936
Chromosome biochemistry, 3078
Chromosome number, 2664
Cytology, 2668
Genetics, 2668
Hybridization, 1756
Introduction, plant, 3586
Melolontha, 1272
Mičurinism, 558–9
Mutation, induced, 2704, 3030, 3045
Pollination, 558
Polyploidy, 596
Quality of product, 3053
Radiation, 3030, 3045
Rhizobium, 596
Seed production, 2428
Variety trials, 560, 1724–5, 1758, 3020, 4274
X rays, 2704
Lemon, *see Citrus*
Lens. Lentil
Bruchus, 4901
Varieties, 2394
Leptinotarsa
Solanum. Potato, 629, 678, 704–5, 1834–5, 2634, 4417
Lentil, *see Lens*
Leptosphaeria
Avena. Oats, 362, 1455, 1592, 2667, 2890, 3958, 3997
Hordeum. Barley, 2960
Mutation, 363
Triticum. Wheat, 4023
Lespedeza
Breeding, 1780, 2421, 3031, 3105
Genetics, 2421
γ rays, 3957
History and evolution, 2421
Meloidogyne, 1780
Mutation, induced, 3045, 3957
Neutrons, 3957
Quality of product, 153, 3031
Radiation, 3045
Tannoids, 3043
Xanthomonas, 2678
Lethals, 3642, 3690
Gossypium. Cotton, 3191, 3200
Hordeum. Barley, 182, 2962
Lycopersicon. Tomato, 4838
Malus. Apple, 3793
Nicotiana. Tobacco, 1988
Oryza. Rice, 1696, 3870–1
Pyrus. Pear, 2122
Secale. Rye, 4138
Triticum. Wheat, 266, 1576, 4030, 4053
Ustilago, 1434, 4130
Vitis, 3393
Lettuce, *see Lactuca*
Light, effect of, 4926
Nicotiana. Tobacco, 800
Oryza. Rice, 2997
Saccharomyces, 4206

Light, effect of—*continued.*
Streptomyces, 2405
Ligule
Oryza. Rice, 2998
Lima bean, *see Phaseolus*
Linamarin
Trifolium. White clover, 4341
Linamarase
Trifolium. White clover, 4341
Linkage, 11, 24–5, 1129–31, 1389, 1402, 1406, 2505, 2514, 2533–5, 2667, 3561, 3658–60, 3687, 3952
Corchorus. Jute, 3921
Gossypium. Cotton, 718, 1340
Hordeum. Barley, 182, 2495, 2963, 2970, 2975
Nicotiana. Tobacco, 787
Oryza. Rice, 517, 1693, 1719, 2998, 3884, 3921
Pisum. Pea, 3526, 4889–90
Triticum. Wheat, 267
Ustilago, 1434
Venturia, 4623
Zea. Maize, 385, 4153, 4156–7
Linoleic acid
Glycine. Soya bean, 2377
Linolenic acid
Glycine. Soya bean, 2377
Linseed, *see Linum*
Linum. Flax
Breeding, 107, 119, 182, 1259, 1264, 1895, 1898, 3216, 3218, 3861, 3992, 4464–5, 4470–2
Chemicals, effect of, 743
Colletotrichum, 4473
Colour, 1893, 1896
Cytoplasmic inheritance, 2434
Fruit, 1894
Fusarium, 107, 742–3, 1898
Genetics, 1896–7
Hybridization, 1260, 1894, 3959
Hybridization, graft, 4470
Inheritance of acquired characters, 4468
Introduction, plant, 3217
Lodging, 742
Melampsora, 741, 1897, 4470
Mutation, induced, 201
Mycosphaerella, 182, 3959
Nutrients, 4468
Polyspora, 107
Quality of product, 1895, 1898, 3215–6, 4472
Selection, artificial, 4469
Soil pH, 743
Taxonomy, 1896
Varieties, 182, 207, 741–2, 1892–3, 3214, 4470–1
Variety trials, 130, 740, 3213, 4466–7
Viruses, 3218
Yield, 130
Linum. Linseed
Breeding, 1259, 1279, 2667, 3913
Colletotrichum, 4473
Colour, 1896
Erysiphe, 122
Fasciation, 4570
Fusarium, 851, 3299
Genetics, 1896, 3832, 3913
γ rays, 4570
Hybridization, 1260
Melampsora, 850–1
Quality of product, 2667, 3298
Sterility, male, 3832
Taxonomy, 1896
Varieties, 182, 849, 2039–40
Variety trials, 4568–9
Litchi, *see Nephelium*
Lodging
Avena. Oats, 1330–1, 2678, 4129
Glycine. Soya bean, 4882
Lodging—*continued.*
Hordeum. Barley, 241, 480, 497, 1364, 1464, 2639, 2960, 4129, 4208
Linum. Flax, 742
Medicago, 4328
Oryza. Rice, 532, 2664, 2670, 4262–3
Saccharum. Sugar cane, 3240, 4493
Secale. Rye, 2898
Sorghum, for sugar, 4495
Triticum. Wheat, 232, 241, 319, 1464, 1473, 1495, 1538, 2637, 2782, 3818, 4078
Zea. Maize, 185, 465, 1259, 1638, 4167
Lolium
Breeding, 107, 544, 581, 1726, 3036, 3040, 3957, 4289
Caryopsis, 1355
Chromosome morphology, 3061
Colchicine, 4289
Ecotypes, 3786
Flower, 1355
Fluorescence, 107
Genetics, 3058
Growth period, 3786
Habit, 3786
Hybridization, 3059
Hybridization, intergeneric, 1726, 2676, 3031
Hybridization, interspecific, 177, 3061, 3861, 4286
Perennial habit, 1364
Phialea, 2602
Polyploidy, 1730, 3049, 3861, 4289
Puccinia, 1364, 3036, 3040, 3957, 3962
Quantitative characters, 3058
Seed production, 2604
Statistics. Genetics, 547
Sterility, self, 1730
Temperature, effect of, 1355
Varieties, 119, 176, 2639, 3060, 4287–8
Variety trials, 107, 1745–6, 2603, 2605, 3057, 4285
Vernalization, 1471
Lophodermium
Pinus. Pine, 2256
Loquat, *see Eriobotrya*
Lotoaustralin
Trifolium. White clover, 4341
Lotus. Birdsfoot trefoil
Breeding, 619, 4360
Chromosome number, 4361
Colour, 135
Flower, 135
Genetics, 135
Habit, 3114
Hybridization, 4360
Ovule, 3115, 3635
Polyploidy, 1726, 4360
Seed production, 3114
Shedding, 619, 3114
Sterility, fertility, 4360
Sterility, self, 3115, 3635
Variety trials, 1758, 3113
Lucerne, *see Medicago*
Lupin, *see Lupinus*
Lupinus. Lupin
Acenaphthene, 4358
Aurantia, 4358
Breeding, 1244, 1788, 3041, 3112, 4357
Cell division, 4358
Chromosome number, 175, 1784, 1786
Colchicine, 4358
Colour, 618, 1782, 3107, 3110
Development, 3106
Erysiphe, 3109, 3861
Fasciation, 3108
Flower, 618
Fusarium, 1270, 3109, 3861
Genetics, 618, 1787, 3106–7, 3111
Glomerella, 3041

Lupinus. Lupin—*continued*.
Growth period, 1788
Heterosis, 3111, 4355
γ-Hexachlorocyclohexane, 4358
Hybridization, graft, 1783, 4356
Hybridization, interspecific, 618, 1782, 1785–6, 3109, 4356
Meiosis, 618
Mutation, induced, 3045
Mutation, spontaneous, 3110
Pollination, 3110
Quality of product, 1782, 1787–8, 2637, 3107, 3111
Radiation, 3045
Seed, 1782, 3107
Shedding, 3109
Stemphylium, 3041, 3112
Varieties, 2637, 4357
Variety trials, 617
Viruses, 175, 3109
X rays, 175
Lycopersicon. Tomato
Aging, 1021
Alternaria, 3453, 4851
Anatomy, 1010
Ascorbic acid, 1008–9
Breeding, 130, 175, 178–9, 1261, 2066, 2300–2, 2307, 2345–6, 2667, 2669, 2674, 3448, 3498, 3957–8, 4850, 4853
Chimeras, 1012, 1172
Chromosome aberrations, 2350, 4854
Chromosome morphology, 3140
Cladosporium, 179, 2670, 2682, 3447
Cold resistance, 1025, 2300, 2359, 3445, 4850
Colour, 969, 4838
Corky root, 2358
Development, 3494
Dominance, 1306, 3794
Endosperm, 4846
Fertilization, sexual, 1021
Fruit, 4847
Fungi, 178, 1024, 3454
Fusarium, 2682, 3499, 3957, 4853
Genetics, 181, 969, 1004, 1027, 1297, 2503, 3492, 3496, 3502, 3793, 4847, 4855
Glass, cultivation under, 4775
Grafting, 1020, 2355, 2358
Growth period, 1259, 1270, 2300, 2359, 3446, 3490, 4775–6
Habit, 4836
Heat, drought, resistance, 2360
Heterosis, 1260, 3491, 3793, 4779
History and evolution, 1018, 3140
Hybridization, 1004–6, 1015, 2347, 2360, 3443, 3490, 3495–6, 3499, 3792, 4837
Hybridization, graft, 1013–4, 1025, 1809, 2351–4, 3493, 3503, 3842, 4846, 4856
Hybridization, interspecific, 122, 1007–10, 1270, 2348, 2358, 2639, 2678, 2682, 3446, 3492
Leaf shrivel, 2682
Lethals, 4838
Meiosis, 4844–5
Meloidogyne, 1027, 4854
Mičurinism, 1015, 2345, 2348, 2354–6, 2359
Multiple genes, 4853
Mutation, induced, 1011, 1020, 1306, 2349–50, 2702, 3942
Mutation, spontaneous, 4838
Nematodes, 3957
Neutrons, 2350, 3453
Parthenocarpy, 2357, 3503
Physiology, 4838
Phytophthora, 108, 1026, 2669–70, 4851
Plastids, 1011
Pleiotropy, 1008
Pollen, 208, 688, 1021

Lycopersicon. Tomato—*continued*.
Pollination, 92, 1019, 2357, 3495, 4848
Polyploidy, 4844–5
Quality of product, 166, 182, 1022, 1259, 1276, 2298, 2300, 2360, 2670, 3497 8, 4848–9
Quantitative characters, 1004, 2503, 3794
Radioactive isotopes, 3942
Seedlings, 3496
Splitting, 4776
Statistics. Experimental designs, 4849
Statistics. Genetics, 1004, 2503
Sterility, fertility, 4846
Sterility, male, 3495–6
Taxonomy, 1023–4
Temperature, effect of, 1002, 3494
Varieties, 181, 1016–7, 1022, 1276, 1298, 1423, 2299, 2305, 2356, 2667, 3447, 3453, 3500, 4839–43
Variety trials, 1003, 2308–9, 2361–2, 4835–6
Verticillium, 2667, 2678, 3500
Viruses, 122, 2360, 3446, 4855
Xenia, 182
X rays, 1011, 1306, 2349–50, 2702, 3453
Lysenkoism, *see* Mičurinism
Lysine
Triticum. Wheat, 4063

MACROPHOMINA
Corchorus. Jute, 3220
Magnesium, 1391
Beta. Sugar beet, 783
Magnetism, effect of, 2584
Maize, *see Zea*
Maleic hydrazide
Zea. Maize, 1626, 2938
Male sterility, *see* sterility, male
Malpighia
Breeding, 4676
Malting quality, *see* quality of product
Malus. Apple
Aneuploidy, 181
Apomixis, 2068, 2109
Biochemistry, 2091, 2111
Breeding, 874, 2080, 2097–100, 2114, 2667, 2669, 3793, 4589, 4591, 4595, 4601, 4605, 4620
Carpocapsa, 2118
Chimeras, 2124, 4597
Chromosome number, 3331, 4613
Carbon dioxide, 2606
Colchicine, 1270
Cold resistance, 874, 882, 2091, 2113–4, 3335, 3944, 4618–21
Colour, 2703, 3329–30, 4607
4-CPB, 223
2,4-D, 223
Dormancy, 2106
Eriosoma, 4589, 4591
Ethylene oxide, 2080
Fruit, 1231, 2606
Genetics, 2101, 4622
Germination, 181
Grafting, 879, 881, 3332, 3336, 4592, 4598
Growth period, 4589, 4595, 4598
Hybridization, 3332, 4613, 4621
Hybridization, intergeneric, 877, 1270, 4589, 4606
Hybridization, interspecific, 182, 2102, 2669, 4595
Land races, 2088
Leaf, 1231, 3333
Lethals, 3793
Metatetranychus, 4625
Mičurinism, 2083, 4608–9
Mutation, 3330
Mutation, induced, 2080, 3697, 3942–3
Mutation, somatic, 880, 2703, 4607
1-Naphthaleneacetamide, 2070
Neutrons, 2703, 3943

Malus. Apple—*continued.*
Nutrients, 881
Phyllosticta, 2101
Phytophthora, 1270, 3336
Podosphaera, 2075, 3793, 4595, 4622
Polyphenols, 2115–6
Polyploidy, 181, 880, 1270, 3331, 4597
Pollen, 208
Pollination, 2083, 2106–7, 4609
Quality of product, 2080, 2101–2, 2117, 3452, 4614
Radiation, 2080
Radioactive isotopes, 3697, 3942
Sclerotinia, 2115
Selection, artificial, 1231
Size, 879
Sterility, fertility, 2108
Taxonomy, 2112, 3334
Tetranychus, 883
Toxic soils, 4615–7
Varieties, 2068, 2087, 2103–5, 2117, 3797, 4592, 4610–2
Variation, 3333
Vegetative reproduction, 2110
Venturia, 182, 197, 1270, 2080, 2116–7, 2667, 2669, 3337–8, 4595
Wax, 2071
X rays, 2703, 3943
Mandarin, *see Citrus*
Manganese
Pisum. Pea, 1270
Mangel, *see Beta*
Mangifera. Mango
Breeding, 3902
Development, 122
Taxonomy, 3604
Varieties, 2161, 2430, 4659
Mango, *see Mangifera*
Mangold, *see Beta*
Manihot. Cassava
Breeding, 3902, 3912, 3931
Brown streak, 129
Hybridization, intergeneric, 129
Hybridization, interspecific, 129, 785, 3247, 3912
Mosaic, 129
Mutation, induced, 3912
Phytophthora, 1984
Polyploidy, 3912
Taxonomy, 140, 3248
Varieties, 3248
Variety trials, 2671, 3247
Viruses, 785, 2664, 3931
X rays, 3912
Manioc, *see Manihot*
Mannitol
Andropogon, 1325
Bouteloua, 1325
Panicum, 1325
Manures, *see* nutrients
Maple, *see Acer*
Marasmius
Theobroma. Cacao, 141, 817–20, 2011–2, 3946, 4546
Marjoram, *see Origanum*
Maternal inheritance, *see* matrocliny
Matrocliny
Triticum. Wheat, 3615
Maturation period, *see* growth period
Mayetiola
Biotypes, 345
MCPB
Avena. Oats, 219
Hordeum. Barley, 219
Triticum. Wheat, 218
MCPS
Pisum. Pea, 221
Mealy endosperm
Triticum. Wheat, 4079
Medicago
Anatomy, 4327
Bacteria, 3959
Breeding, 182, 553, 557, 598–9, 601, 604–5, 1759, 2626, 2628, 2667, 2676, 3032, 3046, 3080, 3088, 3962, 4310–1, 4314, 4319, 4328
Cercospora, 3090
Cold resistance, 2667, 2671, 3088, 4322, 4326–7
Colletotrichum, 3959
Colour, 1761
Corynebacterium, 553, 3023, 4327
Ditylenchus, 182, 3037, 3092
Ecotypes, 4309, 4312–8
Erysiphe, 3989
Flower, 600, 1761, 1766, 3082
Fruit, 3876
Fusarium, 2671
Genetics, 1760–1, 1766, 1768, 2677, 3035, 3082, 3876, 3959
Geographical races, 601
Habit, 2676
Heat, drought, resistance, 3089, 4322
Hybridization, 3023, 3083–4, 4306
Hybridization, interspecific, 119, 1756, 1762
Inbreeding, 13, 3081, 4324
Lodging, 4328
Meloidogyne, 3037
Multiple genes, 600
Mutation, induced, 2704
Nutrients, 602
Pellicularia, 2671
Phoma, 3959
Photoperiodism, 597, 4327
Pollination, 3087
Polyploidy, 119, 1761–2, 3049, 3086, 3090, 3989
Pseudomonas, 1767
Quantitative characters, 3088
Root, 1765, 2676, 4327
Seed production, 3089, 4326
Selection, artificial, 3956
Selection, natural, 597, 3089, 4326
Sterility, fertility, 13, 4324
Sterility, self, 3086
Taxonomy, 601, 4325
Therioaphis, 557, 603–5, 1769, 3032, 3093, 4330–1
Toxic soils, 2667
Uromyces, 1768, 3035, 3989
Variation, 3046
Varieties, 552, 1763–4, 1769, 2670, 3085, 4307, 4322–3
Variety trials, 1364, 1770–1, 2618, 2645, 3079–80, 4308, 4321
Verticillium, 3091
X rays, 2704
Yield, 4324
Medicinal plants
Breeding, 2046, 4577
Chromosome number, 866
Introduction, plant, 2047
Taxonomy, 3589
Meiosis, 1200–1, 1400, 2456–7, 3751, 3763–5
Aegilops, 280, 297, 4036
Agropyron, 1488, 1755
Allium, 976–7
Aloe, 749
Andropogoneae, 4293
Beta. Sugar beet, 1944
Bromus, 578, 4284
Cajanus, 4903
Citrus. Citron, 3366
Coix, 3902
Corchorus. Jute, 3220
Cucumis. Cucumber, 3588
Digitaria, 589
Echinochloa, 3593
Elymus, 4302

Meiosis—*continued.*
Ginkgo, 2285
Gossypium. Cotton, 1373, 4453
Hibiscus, 3220, 3222–3
Hordeum. Barley, 3619
Lupinus. Lupin, 618
Lycopersicon. Tomato, 4844–5
Musa. Banana, 3946
Musa, for fibre, 1902
Nicotiana. Tobacco, 794, 4525
Oryza. Rice, 3003, 3006
Poa, 1382, 4279
Ribes, 4589, 4597
Ricinus. Castor oil plant, 4565
Rubus, 912–4, 4683
Saccharum. Sugar cane, 1912, 2475, 3227
Secale. Rye, 272–3, 280, 369, 1485–6
Saccharomyces, 4924
Solanum. Potato, 679, 3143, 4385
Thea. Tea, 2478
Triticum. Wheat, 272–3, 280, 297, 1485–6, 1488, 3806, 4036
Zea. Maize, 2475
Zizania, 2472
Melampsora
Biotypes, 182
Linum. Flax, 741, 1897, 4470
Linum. Linseed, 850–1
Populus. Poplar, 957, 4747
Melilotus. Sweet clover
Breeding, 1781, 3025
Colchicine, 1776
Coumarin, 137, 555, 615–6, 3025, 3618, 4347–8, 4350–1
Embryo, 4353
Genetics, 137, 555, 615, 3618, 4352
Hybridization, interspecific, 137, 4347, 4352–3
Mutation, induced, 4348
Polyploidy, 1776
Quality of product, 616, 4352–3
Seed, 4352
Sitonia, 4354
Varieties, 4349–50
Variety trials, 3021
Melinis
Reproduction, 3932
Meloidogyne
Biotypes, 4853
Capsicum, 833
Gossypium. Cotton, 3960
Hibiscus, 4483
Lespedeza, 1780
Lycopersicon. Tomato, 1027, 4854
Medicago, 3037
Nicotiana. Tobacco, 170, 175, 1311, 1320, 2664, 4537
Phaseolus. Lima bean, 4871
Prunus. Peach, 889, 2141
Prunus. Plum, 2141
Trifolium. Red clover, 1730
Melolontha
Grasses, 1272
Leguminous forage crops, 1272
Melon, *see Citrullus* and *Cucumis*
Mendelism, *see* genetics
Mentha
Breeding, 2046, 2400
Genetics, 4910
Genome analysis, 2401
Growth period, 3544
Heat, drought, resistance, 3547
Hybridization, interspecific, 2401–2, 3545–6
Photoperiodism, 3544
Polyploidy, 4909
Quality of product, 2402, 3542, 4909–10
Taxonomy, 3543, 3545–6
Temperature, effect of, 3544
Mentha—continued.
Varieties, 3542–3, 4555
Variety trials, 3542
Mergamma
Beta. Sugar beet, 108
Metatetranychus
Malus. Apple, 4625
Metaxenia, *see* xenia
Methionine
Pulses, 4859
Microsphaera
Quercus. Oak, 3421
Mičurinism, 57, 1171, 1173–4, 1179–80, 2630, 3326, 3716–7, 3721–6, 3803
Avena. Oats, 358, 2888
Cereals, 1181–2, 4000, 4005
Citrus, 2155, 4653
Crop plants, 2451, 3845, 3978–80
Cucurbits, 993
Fagopyrum. Buckwheat, 4118
Gossypium. Cotton, 732, 1414, 4455, 4460
Grasses, 558–9
Helianthus. Sunflower, 3302
Hordeum. Barley, 4006
Ipomoea. Sweet potato, 1841
Leguminous forage crops, 558–9
Lycopersicon. Tomato, 1015, 2345, 2348, 2354–6, 2359
Malus. Apple, 2083, 4608–9
Phleum, 2632
Pisum. Pea, 2383
Prunus. Apricot, 2125–6
Prunus. Peach, 2154
Prunus. Plum, 2125–6
Rubus. Raspberry, 4684
Secale. Rye, 378
Solanum. Potato, 3134, 3852
Trifolium. Red clover, 2632
Triticum. Wheat, 58, 250, 284, 299, 1414, 1494–7, 1518, 2749–50, 2759, 4006, 4061
Zea. Maize, 58, 1629, 1635, 4171, 4181
Millet, *see Echinochloa, Eleusine, Panicum, Pennisetum* and *Setaria*
Milling quality, *see* quality of product
Mint, *see Mentha*
Miscanthus
Hybridization, intergeneric, 2496
Quality of product, 1750
Starch, 2496
Sterility, male, 1751
Mitosis, *see* cell division
Mixed crops
Beta. Sugar beet, 1935
Secale. Rye, 377
Mixoploidy
Larix. Larch, 2248
Modifiers
Brassica. Sprouting broccoli, 2327
Zea. Popcorn, 1055
Molybdenum
Thea. Tea, 3269
Momordica
Polyploidy, 995
Monilia
Theobroma. Cacao, 817
see also Sclerotinia
Monilinia, see Sclerotinia
Monogerm seed balls
Beta. Sugar beet, 780–2, 1259, 1263, 1929, 1942, 1954–5, 1968, 4512–5
Monosomics, *see* aneuploidy
Morphine
Papaver. Poppy, 3277
Morphology, 1230
Morus. Mulberry
Breeding, 4657

Mucuna. Velvet bean
Polyploidy, 1779
Mulberry, *see Morus*
Multiple alleles, 2593, 3830
Brassica. Cabbage, 2321
Brassica. Sprouting broccoli, 2327
Oryza. Rice, 3870–2, 4238
Pisum. Pea, 2386
Pyrus. Pear, 3345
Secale. Rye, 1604
Multiple genes, 2418, 3649
Brassica. Cabbage, 3468
Brassica. Swede, 3468
Gossypium. Cotton, 3191
Lycopersicon. Tomato, 4853
Medicago, 600
Nicotiana. Tobacco, 2002
Oryza. Rice, 529, 4242
Phaseolus, 1032
Solanum. Potato, 3155
Triticum. Wheat, 182, 337, 1441, 1542, 2773, 2869
Zea. Maize, 433, 1630
Musa. Banana
Breeding, 3946
Fruit, 121
Fusarium, 133
History and evolution, 2653, 3388
Hybridization, interspecific, 2206, 2653, 2657, 2664
Meiosis, 3946
Mutation, 121
Parthenocarpy, 2664
Polyploidy, 2206, 2664
Sterility, male, 2206
Taxonomy, 133, 2206, 2653, 3388
Temperature, effect of, 121
Varieties, 2205
Musa, for fibre
Chromosome number, 1902
Hybridization, interspecific, 750, 1902
Meiosis, 1902
Quality of product, 750, 1902
Sterility, female, 1902
Sterility, male, 1902
Mushroom, *see Psalliota*
Musk melon, *see Cucumis*
Mustard, *see Brassica*
Mutation, 9, 12, 39, 41–2, 144, 1148–55, 1319, 1374, 1384, 1389, 1392, 2487, 2506, 2513–4, 2516, 2548–52, 3642, 3645, 3690–4, 3950
Acetobacter, 2403
Bacteriophages, 1148
Hordeum. Barley, 40, 1675, 2965
Leptosphaeria, 363
Malus. Apple, 3330
Musa. Banana, 121
Nicotiana. Tobacco, 4526
Saccharomyces, 1062
Zea. Maize, 146, 445–8, 2485, 3947, 3954
Mutation, back, 55, 1170, 3649, 3712–3
Forest trees, 2547
Pisum. Pea, 2547
Saccharomyces, 4918
Zea. Maize, 2547
Mutation, induced, 10, 44–6, 49, 51–4, 197, 200–2, 1157, 1159–63, 1166–7, 1169, 1327, 1377, 1381, 1424, 1444, 2466, 2468, 2493–4, 2508, 2555–7, 2607, 3639, 3641, 3696, 3698–711, 3740, 3826, 3839, 3918, 4926, 4930, 4934
Arachis. Groundnut, 195, 1310, 1319, 3971
Asparagus, 2706
Aspergillus, 2489
Avena. Oats, 175, 1304, 2656, 3045
Bacillus, 182
Brassica. Brussels sprouts, 4584
Brassica. Cabbage, 4584, 4776
Mutation, induced—*continued.*
Cereals, 201, 2698
Cochliobolus, 2667
Corchorus. Jute, 3220
Crop plants, 193, 203–4, 1248, 1409–10, 2668, 2689–94, 2696, 2700, 3785, 3803, 3917, 3968, 3970, 3973–8
Digitalis, 3793, 3942
Endoconidiophora, 181
Fusarium, 4462, 4896
Glycine. Soya bean, 2699
Gossypium. Cotton, 3918
Grasses, 2704, 3030, 3045
Hordeum. Barley, 119, 182, 480–3, 1168, 1307, 1649, 1651, 1653–5, 1663, 1665, 1684, 2873, 2966–7, 2973, 3791, 3917
Humulus. Hop, 2014
Ipomoea. Sweet potato, 3912
Leguminous forage crops, 2704, 3030, 3045
Lespedeza, 3045, 3957
Linum. Flax, 201
Lupinus. Lupin, 3045
Lycopersicon. Tomato, 1011, 1020, 1306, 2349–50, 2702, 3942
Malus. Apple, 2080, 3697, 3942–3
Manihot. Cassava, 3912
Medicago, 2704
Melilotus. Sweet clover, 4348
Nicotiana. Tobacco, 790, 3255, 3894
Oryza. Rice, 532, 2467, 2656, 2701, 4242–3
Paspalum, 1335, 3957
Penicillium, 2489, 4914
Phaseolus, 3957
Phytophthora, 1428, 4650
Pisum. Pea, 1165, 3527–8, 3957
Puccinia, 4107
Pyrus. Pear, 3697
Rhodotorula, 2624
Saccharomyces, 1063, 4917
Secale. Rye, 2628, 2895, 3045
Sorghum, 510, 2990
Streptomyces, 2405, 4911
Torulopsis, 3558
Trifolium. Alsike clover, 3957
Trifolium. Crimson clover, 3957
Trifolium. Subterranean clover, 4346
Triticum. Wheat, 251, 1492, 2470, 2868, 2873, 3846, 3895, 4028
Ulmus. Elm, 2705
Venturia, 197, 3337–8, 4624
Viruses, 217, 1164
Xanthomonas, 2667
Zea. Maize, 449, 1332, 1345, 1375, 1625, 2943, 3972
Mutation, somatic, 56, 1377
Citrus. Orange, 890
Fruit crops, 2697
Malus. Apple, 880, 2703, 4607
Pyrus. Pear, 3340
Ribes. Black currant, 922
Ribes. Red currant, 4596
Mutation, spontaneous, 43, 1156, 1158, 1379, 2510, 2553, 3695, 3712, 3840
Acetobacter, 2404
Avena. Oats, 365, 2477
Cajanus, 2395
Cicer. Chickpea, 2393
Citrus. Orange, 2663
Euchlaena, 442
Gossypium. Cotton, 1858, 3193
Hordeum. Barley, 1652, 2963, 3806
Lactuca. Lettuce, 2330
Lupinus. Lupin, 3110
Lycopersicon. Tomato, 4838
Oryza. Rice, 2998
Phaseolus, 2364
Puccinia, 330–1, 1678, 4101

Mutation, spontaneous—*continued*,
Saccharomyces, 2409, 2834
Vitis, 2237, 4716
Zea. Maize, 442, 1388, 1394, 1627
Mycosphaerella
Arachis. Groundnut, 131, 1310
Biotypes, 1426
Brassica. Brussels sprouts, 1270
Cicer. Chickpea, 3534
Linum. Flax, 182, 3959
Populus. Poplar, 957

1-NAPHTHALENEACETAMIDE
Malus. Apple, 2070
α-Naphthaleneacetic acid
Cucumis. Cucumber, 4831
Nebularine
Hordeum. Barley, 483
Nectarine, *see Prunus*
Nectria
Biotypes, 958
Needle grass, *see Stipa*
Nephelium. Litchi
Quality of product, 2171
Neutrons, 46, 201
Arachis. Groundnut, 2465
Asparagus, 2706
Avena. Oats, 349, 2792
Brassica. Brussels sprouts, 4584
Brassica. Cabbage, 4584
Glycine. Soya bean, 1339, 2699
Hordeum. Barley, 349, 2721
Lespedeza, 3957
Lycopersicon. Tomato, 2350, 3453
Malus. Apple, 2703, 3943
Nicotiana. Tobacco, 3259, 4531
Oryza. Rice, 516, 2701
Paspalum, 1335, 3957
Phaseolus, 3957
Pisum. Pea, 4895
Secale. Rye, 175
Sorghum, 2670
Trifolium. Alsike clover, 3957
Trifolium. Crimson clover, 3957
Trifolium. Red clover, 4337
Triticum. Wheat, 2792, 2826, 3892
Ulmus. Elm, 2705
New Zealand hemp, *see Phormium*
Niacin
Avena. Oats, 357
Triticum. Wheat, 298
Vitis, 936
Nicotiana. Tobacco
Aging, 3265
Alkaloids, 177, 2676
Amphidiploidy, 789–90, 3889
Breeding, 121, 170, 798–800, 1270, 1281, 1299, 1329, 1985, 1996, 2666–7, 2676, 3251, 3261, 3914, 3955, 3958, 4538
Cell division, 3258, 3265
Cercospora, 3263
Chromosome aberrations, 792, 1989–90, 3259, 4531
Chromosome substitution, 1999
Colletotrichum, 1997
Colour, 1994, 3882, 4526, 4535
Competition, 3889, 4532
Development, abnormal, 790, 2677
Dormancy, 796
Erysiphe, 3251, 4540
Flower, 1994
Fructose, 798
Fungi, 4947
Genetics, 177, 1125, 1311, 1320, 1989, 1994, 2676, 3254, 3882, 4535
Nicotiana. Tobacco—*continued*.
Genome analysis, 3874
Germination, 796
Glucose, 798
γ rays, 792
Growth period, 797, 1992–3, 4533
Haploidy, 795
Heat, drought, resistance, 4535
Heterosis, 788, 3252, 4524
Hybridization, 788, 1298, 1350, 1986, 3252, 4523, 4536
Hybridization, interspecific, 177, 792, 1987–90, 1997–9, 2675–7, 3251, 3253–4, 3874, 4525–6
Hypochlorite, sodium, 796
Introduction, plant, 2675
Leaf, 1994, 3882
Lethals, 1988
Light, effect of, 800
Linkage, 787
Meiosis, 794, 4525
Meloidogyne, 170, 175, 1311, 1320, 2664, 4537
Multiple genes, 2002
Mutation, 4526
Mutation, induced, 790, 3255, 3894
Nematodes, 4538
Neutrons, 3259, 4531
Nitrogen, 1996
Pathology, 1094, 1350, 2675
Peronospora, 175
Photoperiodism, 797, 1989, 1992, 2002, 4533
Phytophthora, 175, 177, 2676, 3261, 3955
Pollen, 1988, 2676
Pollination, 1358
Polyploidy, 3258, 4532
Pratylenchus, 177
Pseudomonas, 1991
Quality of product, 171, 1276, 1995–6, 3260, 4529–30, 4534–6, 4539
Quantitative characters, 1125, 1994
Seed production, 4523
Segregation, 171
Selection, natural, 1988
Statistics. Experimental designs, 1329
Statistics. Genetics, 1125
Stem, 2676
Sterility, fertility, 1989, 3253
Temperature, effect of, 797, 1992–3, 4526
Thielaviopsis, 177, 1273, 2676, 4538
Translocation, 793, 1999
Variegation, 1990, 3254
Varieties, 791, 1276, 1985, 2001, 3256–7, 4527–30, 4540
Variety trials, 4522
Verticillium, 1367
Viruses, 217, 800, 1164, 1273, 1998–2001, 3251, 3958, 4538–40
Xanthomonas, 175
X rays, 790, 1987, 2677, 3255, 3894
Nitric oxide
Vicia. Broad bean, 4861
Nitrogen, 86
Beta. Sugar beet, 783
Hordeum. Barley, 1665, 2969, 4219
Nicotiana. Tobacco, 1996
Oryza. Rice, 4269
Saccharum. Sugar cane, 770, 1923
Triticum. Wheat, 181, 1533
Vicia. Broad bean, 2580
Vitis, 4710
Zea. Maize, 465
Nitrogen mustard
Hordeum. Barley, 483
p-Nitrophenol
Brassica. Cabbage, 3474
Nitroprusside, sodium, 2487
Nitrous oxide, 1217
Phalaris, 1748

Nitrous oxide—*continued.*
Prunus. Cherry, 2081
Prunus. Plum, 2081
Nucleic acids, 28, 47, 65–6, 1135, 1169, 1188, 1195, 2511, 2528, 2556, 2575, 2595, 3668, 3743–4, 3761, 3764, 3778, 3949, 4926, 4935
Vicia. Broad bean, 78, 3823
Nucleolus, 1188, 1192, 3746
Grasses, 1737
Hordeum. Barley, 1662
Triticum. Wheat, 2763
Zea. Maize, 2938
Nucleus, 64–5, 1187–9, 1191, 2569, 3564, 3679, 3743, 3745, 3778, 4926, 4935
Palms, 903
Saccharomyces, 2412, 3553–4, 4921
Secale. Rye, 1190
Thea. Tea, 3267
Vicia. Broad bean, 3744
Nutrients
Hordeum. Barley, 3890
Humulus. Hop, 830
Ipomoea. Sweet potato, 1844
Linum. Flax, 4468
Malus. Apple, 881
Medicago, 602
Zea. Maize, 438
Nuts
Varieties, 3319

OAK, *see Quercus*
Oat grass, *see Arrhenatherum*
Oats, *see Avena*
Ocimum
Varieties, 4555
Oidium
Hevea. Rubber, 2054, 2060, 2664
Vitis, 2210
Oil palm, *see Elaeis*
Oil plants
Breeding, 834, 4559
Quality of product, 1263, 3285
Okra, *see Hibiscus*, as vegetable
Olea. Olive
Breeding, 2628
Quality of product, 117
Size, 3375
Sterility, fertility, 907, 2626
Sterility, self, 3374
Varieties, 182, 906–7, 2178, 3375
Oliarus
Phormium, 3225
Oligogenes, *see* genetics
Olive, *see Olea*
Onion, *see Allium*
Onobrychis. Sainfoin
Breeding, 613
Ecotypes, 3787
History and evolution, 3828
Hybridization, 1756
Variation, 3787
Ontogeny, *see* development
Ophiobolus
Cereals, 244
Cysteine, 244
Grasses, 1546
Triticum. Wheat, 323, 1546
Orange, *see Citrus*
Orchard grass, *see Dactylis*
Origanum
Breeding, 2046
Origin of life, 1183–5, 2566–7, 3563, 3736
Ornithopus
Heat, drought, resistance, 1730
Polyploidy, 1730, 1790
Orobanche
Helianthus. Sunflower, 855, 3820, 3867
Oryza. Rice
Acenaphthene, 2656
Aminoacids, 536, 4243
Anatomy, 523, 527, 1712
Atomic explosion, 2467
Autumn decline, 1717, 4264
Breeding, 121–2, 131, 176, 516, 525, 531, 533, 535, 1261, 1264, 1280, 1283, 1292, 1300, 1692, 1711, 1721, 2628, 2651, 2993–4, 2996–7, 3011, 3872, 3902, 3906, 3931, 3995, 4236, 4245, 4254, 4268
Caryopsis, 1695, 2997, 4263
Cell division, 4248
Centres of origin, 3906
Ceresan, 2656
Cochliobolus, 3014–5, 3945, 4265
Colchicine, 2664
Cold resistance, 1715, 3012
Colour, 1280, 1694–5, 3001, 4238–9
Competition, 530, 3891
Development, 1708
Dormancy, 2997, 4269
Ecotypes, 3595
Embryo, 3007
Epidermis, 3014
Fungi, 2651, 3013
Genetics, 524, 1693–5, 1709, 1719, 2500, 2998–3000, 3003, 4238–40, 4255, 4257
Genome analysis, 1707, 4241
Germination, 4252–3
γ rays, 516
Growth period, 520, 529, 1264, 2500, 2997, 3000, 4254–5, 4263
Haploidy, 1707
Heat, drought, resistance, 531, 1716, 4261
Heterosis, 1698, 3002
History and evolution, 4246–7
Hybridization, 530, 1698, 2664, 3870–1, 3902, 4257, 4269
Hybridization, graft, 2648
Hybridization, interspecific, 3003, 4241, 4249
Hydrogen sulphide, 4264
Inflorescence, 2648, 3000
Inhibitors, 3001
Introduction, plant, 2999, 3010–1
Leaf, 1280
Lethals, 1696, 3870–1
Light, effect of, 2997
Ligule, 2998
Linkage, 517, 1693, 1719, 2998, 3884, 3921
Lodging, 532, 2664, 2670, 4262–3
Meiosis, 3003, 3006
Multiple alleles, 3870–2, 4238
Multiple genes, 529, 4242
Mutation, induced, 532, 2467, 2656, 2701, 4242–3
Mutation, spontaneous, 2998
Neutrons, 516, 2701
Nitrogen, 4269
Osmosis, 4252
Pachydiplosis, 122
Pelliculariа, 4266
Photoperiodism, 3926, 4255
Piricularia, 121–2, 534–6, 1280, 1718–9, 3011, 3015–6, 3945, 4267–9
Pollination, 4256
Polyploidy, 522, 530, 2664, 4249
Population genetics, 3883–4
Protein, 522
Quality of product, 525–6, 1711, 2664, 2994, 2997, 3008–9, 4258–9
Quantitative characters, 529, 2500, 3000, 4240
Root, 523
Segregation, 1697
Selection, artificial, 3013
Selection, natural, 3883

Oryza. Rice—*continued*.
Statistics. Biometry, 528, 1714
Statistics. Experimental designs, 1691, 4235
Statistics. Genetics, 2500
Stem, 1710
Sterility, fertility, 1698, 1709, 2467, 3003, 3872, 3902, 4257
Straighthead, 533
Taxonomy, 528, 3595, 4260
Temperature, effect of, 1708, 2997, 4248
Thiamin, 521, 4250–1
Toxic soils, 2997
Translocation, 2467
Varieties, 518–9, 1699–706, 1715, 3004–5, 3011, 4244–5
Variety trials, 141, 1722, 2671, 2995, 4237
Vernalization, 1723
Viruses, 1436, 1720–1, 3017–8, 4270
Water balance, 520
Water, effect of, 4271
X rays, 2467, 2701, 4242–3
Yield, 529, 1713–4, 3000
Oryzopsis
Geographical races, 3071
Hybridization, intergeneric, 1754
Oscinella
Avena. Oats, 1272
Hordeum. Barley, 1272
Triticum. Wheat, 1495
Zea. Maize, 1644
Osmosis
Beta. Sugar beet, 4511
Oryza. Rice, 4252
Raphanus. Radish, 3458
Vitis, 4711
Otiorhynchus
Vitis, 2241
Ovary, *see* flower
Overdominance, *see* heterosis
Ovule, 3781
Gossypium. Cotton, 4442
Lotus. Birdsfoot trefoil, 3115, 3635
Passiflora, 3377
Solanum. Potato, 4386
Oxalate, calcium
Thea. Tea, 4543–4
Oxycoccus. Cranberry
Breeding, 2669, 2674
Varieties, 2667
Oxygen, 86, 1155, 1399, 2464, 2588
Hordeum. Barley, 1665, 2969, 4219
Vicia. Broad bean, 2580–1
Zea. Maize, 449
Ozone
Vicia. Broad bean, 2586

PACHYDIPLOSIS
Oryza. Rice, 122
Pachyrrhizus
Hybridization, interspecific, 623
Sterility, fertility, 623
Paddy, *see Oryza*
Palms
Chromosome aberrations, 2175
Chromosome number, 903
Nucleus, 903
Sterility, male, 2175
Panax
Acclimatization, 2047
Panicum
Breeding, 1325, 3855, 3908
Germination, 1325
Mannitol, 1325
Pantothenic acid
Vitis, 936
Papaver. Poppy
Breeding, 2046, 4553
Genetics, 3277
History and evolution, 3276
Hybridization, 3818
Morphine, 3277
Peronospora, 3861
Quality of product, 4553
Varieties, 3284
Papaw, *see Asimina and Carica*
Papaya, *see Carica*
Paprika, *see Capsicum*
Parsley, *see Petroselinum*
Parthenocarpy
Lycopersicon. Tomato, 2357, 3503
Musa. Banana, 2664
Physalis, 3453
Solanum. Egg plant, 3503
Vitis, 2223
Parthenogenesis, *see* apomixis
Paspalum
Breeding, 3908
Colchicine, 1314
Colour, 1335
Mutation, induced, 1335, 3957
Neutrons, 1335, 3957
Polyploidy, 1314
Varieties, 512
X rays, 3957
Passiflora
Fusarium, 2682
Hybridization, interspecific, 2682
Ovule, 3377
Pollination, 3376
Sterility, fertility, 3377
Passion fruit, *see Passiflora*
Pathology, 197, 212–3, 2484, 2713, 3571, 3919, 4941–2
Paurocephala
Gossypium. Cotton, 2664
Pea, *see Pisum*
Peach, *see Prunus*
Peanut, *see Arachis*
Pear, *see Pyrus*
Pea, southern, *see Vigna*
Pelargonium
Hybridization, interspecific, 4556
Quality of product, 4556
Pellicularia
Arachis. Groundnut, 121, 1310
Biotypes, 121
Gossypium. Cotton, 3181
Hevea. Rubber, 3314
Lactuca. Lettuce, 2330
Medicago, 2671
Oryza. Rice, 4266
Solanum. Potato, 629
Penicillin, 3699
Penicillium
Mutation, induced, 2489, 4914
Segregation, 2407
Ultraviolet rays, 2489, 4914
Zea. Maize, 4195
Pennisetum
Breeding, 1278–9, 3908
Chromosome morphology, 1686
Chromosome number, 1686, 4227
Cytoplasmic inheritance, 4228
Growth period, 511
Hybridization, 511, 3902, 4228
Hybridization, interspecific, 132, 1290, 3902
Selection, artificial, 2987
Sterility, male, 506, 4228
Varieties, 512
Pemphigus
Populus. Poplar, 2271

Pepper, *see Capsicum*
Peppermint, *see Mentha*
Perennial habit
Agropyron, 1490
Avena. Oats, 3997
Lolium, 1364
Triticum. Wheat, 1490
Perilla
Biotypes, 3787
Photoperiodism, 3787
Variation, 3787
Perianth, *see* flower
Period, growth, *see* growth period
Peronospora
Brassica, 4801
Brassica. Cauliflower, 4801
Nicotiana. Tobacco, 175
Papaver. Poppy, 3861
Biotypes, 2707, 3521
Spinacia. Spinach, 3478
Peroxides, 4926
Persea. Avocado
Argyrotaenia, 911
Cold resistance, 2180
Flower, 4678
Grafting, 2181
Introduction, plant, 2181, 4679–80
Phytophthora, 2181
Pollination, 2182
Toxic soils, 2180
Varieties, 910, 2179, 2182, 4677
Variety trials, 4677
Persimmon, *see Diospyros*
Petal, *see* flower
Pecan, *see Carya*
Petroselinum. Parsley
Breeding, 2639
Chromosome morphology, 1056
Cold resistance, 4776
Taxonomy, 1056
Phaeocryptopus
Pseudotsuga. Douglas fir, 95
Phages, *see* bacteriophages
Phalaris
Breeding, 1303
History and evolution, 4291
Hybridization, interspecific, 182
Nitrous oxide, 1748
Polyploidy, 1748
Phaseolus
Ascochyta, 4776
Breeding, 110, 1244, 1278, 1365, 2367, 2682, 3453, 3505
Cercospora, 1364
Colletotrichum, 1259, 1260, 1364, 2299, 2367, 2639, 3815, 3862, 3962
Colour, 2671
Embryo, 3508
Empoasca, 1364
Erysiphe, 2369
Flower, 2671
Fruit, 2364
Fungi, 2670
Genetics, 1035, 2364, 2671, 3511–2, 3962, 4865, 4869
Germination, 175
Grafting, 1042
Hybridization, 2670, 3506
Hybridization, interspecific, 175, 1032, 2367, 2639, 2670, 3507–8, 3862, 4583
Hybridization, wide, 4355
Inheritance of acquired characters, 1042
Isariopsis, 1364, 3962
Leaf, 4865
Multiple genes, 1032
Mutation, induced, 3957
Mutation, spontaneous, 2364
Phaseolus—continued.
Neutrons, 3957
Pathology, 2671
Pseudomonas, 2367, 3512
Quality of product, 2072, 2670–1, 3960
Seedlings, 1032
Selection, natural, 2682
Stem, 2670
Uromyces, 1033, 2367, 2370, 2682, 3962
Variation, 1034
Varieties, 207, 1033–4, 1364, 2365–6, 2720, 3505, 3961, 4778, 4866
Variety trials, 1031, 2308, 2371–2, 4587, 4864
Viruses, 1033, 1035, 1259–60, 2367, 3509–10, 3512, 4869
Waterlogging, 3962
Xanthomonas, 2368
Phaseolus. Lima bean
Breeding, 181, 1297
Cold resistance, 1297
Colour, 1036
Genetics, 181, 1036
Meloidogyne, 4871
Seed, 1036
Statistics. Experimental designs, 3517
Varieties, 4870–1
Phenocopies, 2519
Phenols
Thea. Tea, 4541
Phenols, orthodihydric
Solanum. Potato, 692
Phenoxybutyric derivatives
Pisum. Pea, 220, 222
Phialea
Lolium, 2602
Phleum
Aneuploidy, 566
Biotypes, 3787
Colour, 1743
Flower, 4283
Growth period, 4282
Heterosis, 1730
Mičurinism, 2632
Photoperiodism, 4282–3
Pollination, 2632
Polyploidy, 1730, 1743
Quality of product, 1356
Segregation, 1743
Temperature, effect of, 4282–3
Variation, 3787
Varieties, 1728, 2643
Vernalization, 1471, 3787
Phoenix. Date
Ceratostomella, 4674
Quality of product, 2177
Sex, 2176
Phoma
Biotypes, 2156
Medicago, 3959
Phormium
Breeding, 752
Oliarus, 3225
Varieties, 752
Phosphorus, 1192
Allium. Onion, 76
Beta. Sugar beet, 783
Trifolium. Red clover, 4334
Triticum. Wheat, 318
Vitis, 2214, 4710
Zea. Maize, 462
Photoperiodism
Abies. Fir, 954
Allium, 975
Avena. Oats, 4013
Beta, 624
Beta. Beetroot, 2306

Photoperiodism—*continued.*
Betula. Birch, 1404
Beta. Sugar beet, 2306
Bromus, 1744
Cereals, 4005
Corchorus. Jute, 3926
Crop plants, 2717, 3990
Cucumis. Cucumber, 2344, 3489
Fragaria. Strawberry, 4693
Glycine. Soya bean, 4881
Grasses, 3052
Gossypium. Cotton, 711, 1890
Hordeum. Barley, 2502, 2974
Larix. Larch, 954
Mentha, 3544
Medicago, 597, 4327
Nicotiana. Tobacco, 797, 1989, 1992, 2002, 4533
Oryza. Rice, 3926, 4255
Perilla, 3787
Picea. Spruce, 954
Pinus. Pine, 1236, 2433
Pisum. Pea, 1044, 4776, 4898
Phleum, 4282–3
Poa, 540
Populus. Poplar, 2277
Pseudotsuga. Douglas fir, 954, 967
Saccharum. Sugar cane, 3227
Secale. Rye, 2899, 4013
Solanum. Potato, 628, 686, 1815, 4394, 4399, 4413
Sorghum, for sugar, 3243
Trifolium. White clover, 181
Triticum. Wheat, 248–9, 1514, 1534, 2770, 2854, 3926
Tsuga, 954
Vegetable crops, 2306
Vitis, 2244
Zea. Maize, 1454
Photosynthesis, 1077
Beta. Sugar beet, 1961
Phyllorachis
Chromosome number, 590
Taxonomy, 590
Phyllostachys
Varieties, 592
Phyllosticta
Malus. Apple, 2101
Populus. Poplar, 957
Phylloxera
Vitis, 946, 2209, 2212, 2223, 2240, 2242, 4721
Physalis
Genetics, 2592
Hybridization, interspecific, 3453
Parthenocarpy, 3453
Sterility, self, 2592
Physalospora
Saccharum. Sugar cane, 132, 771, 3233, 3915
Physiology, 1230
Beta. Sugar beet, 777, 2090
Lycopersicon. Tomato, 4838
Picea. Spruce, 1241
Pinus. Pine, 1241
Triticum. Wheat, 2853
Physoderma
Zea. Maize, 2951, 3957
Phytophaga
Triticum. Wheat, 1495, 4023, 4109
Phytophthora
Biotypes, 107, 657, 669, 695–7, 799, 1270, 1825–9, 2607, 2667, 2716, 3153–5, 3262, 3273, 3336, 3795, 3962, 4382, 4406
Castanea. Chestnut, 2628
Fragaria. Strawberry, 4585
Glycine. Soya bean, 1043, 2379
Heterocaryosis, 182
Juglans. Walnut, 2164
Lycopersicon. Tomato, 108, 1026, 2669–70, 4851
Phytophthora—continued.
Malus. Apple, 1270, 3336
Manihot. Cassava, 1984
Mutation, induced, 1428, 4650
Nicotiana. Tobacco, 175, 177, 2676, 3261, 3955
Persea. Avocado, 2181
Prunus. Peach, 1428, 4650
Sex, 4406
Solanum. Potato, 108, 629, 637, 639, 644, 650, 655–6, 661, 665, 667, 669–71, 693–4, 698, 1260, 1263, 1294, 1364, 1805, 1824, 2670–1, 2683, 3786, 3861, 3960, 4380, 4401–5, 4408
Theobroma. Cacao, 806, 817
Vigna. Cowpea, 2682, 3516
X rays, 4650
Phylogeny, *see* history and evolution, and evolution, general theory
Physiological races, *see* biotypes
Picea. Spruce
Breeding, 949–50, 3414
Ecotypes, 1241
Fomes, 4768
Geographical races, 950, 954, 963, 965, 4768
Grafting, 2253
Habit, 2294
Photoperiodism, 954
Physiology, 1241
Quality of product, 949, 966
Radiation, 2293
Seedlings, 2258
Seed production, 3439
Seed testing, 4734
Size, 3414
Sterility, fertility, 4734
Sterility, self, 2250
Pigeon pea, *see Cajanus*
Pigmentation, *see* colour
Pimento, *see Capsicum*
Pine, *see Pinus*
Pineapple, *see Ananas*
Pinus. Pine
Breeding, 96, 950, 2256, 2286, 3414, 3438, 4757, 4763
Colchicine, 97
Cone disease, 2255
Chromosome morphology, 964
Cronartium, 2251
Development, abnormal, 2290
Ecotypes, 1241, 2433, 3437
Fruit, 2292
Genetics, 2290
Geographical races, 950, 962–3, 2287, 4759–60
Germination, 1236
Grafting, 96
Growth period, 98
Heat, drought, resistance, 1243, 4767
Heterosis, 948, 1235
Hybridization, interspecific, 1235, 2251, 2291, 3436–7, 4735
Leaf, 3437
Lophodermium, 2256
Photoperiodism, 1236, 2433
Physiology, 1241
Plastids, 2289
Pollen, 4761
Polyploidy, 97, 2288–9
Quality of product, 1243, 2245, 2288, 3438, 4762–5
Selection, artificial, 1234, 1240–2, 4758
Sex, 3847
Size, 3414
Sterility, fertility, 2291
Sterility, self, 2255
Taxonomy, 2287, 4766
Variation, 4764–5
Xylem, 4760
Yield, 1240

Piricularia
Biotypes, 3070
Copper, 2494
Oryza. Rice, 121–2, 534–6, 1280, 1718–9, 3011, 3015–6, 3945, 4267–9
Pistachio, *see Pistacia*
Pistacia. Pistachio
Varieties, 2172, 4665
Pistil, *see* flower
Pisum. Pea
Actidione, 3727
Adenine, 152
Ascochyta, 3957, 3997
Breeding, 110, 175, 182, 1049, 3453, 3958, 3997, 4770, 4886
Cell division, 1199, 3727
Chemicals, effect of, 1165
Chromosome aberrations, 4895
Chromosome morphology, 4890, 4893
Colchicine, 3727
Cold resistance, 4770
Colour, 3453, 3523–4, 4888
Crossing over, 4894
Development, 3811, 4895
Flower, 1047–8, 3523
Fruit, 3525
Fusarium, 1049, 2671, 3862, 3958
Genetics, 1047, 2671, 3523–5, 3811, 4887–8
Growth period, 1048
Hormones, 3811
Hybridization, graft, 2380–2, 2387
Indole-3-acetic acid, 1045
Leaf, 2386, 4887
Linkage, 3526, 4889–90
Manganese, 1270
MCPS, 221
Mičurinism, 2383
Multiple alleles, 2386
Mutation, back, 2547
Mutation, induced, 1165, 3527–8, 3957
Neutrons, 4895
Phenoxybutyric derivatives, 220, 222
Photoperiodism, 1044, 4776, 4898
Pollen, 688
Pollination, 92
Polyploidy, 3727
Pythium, 2671
Quality of product, 2072, 2387–9, 3529, 4885–6
Quantitative characters, 3530
Seed, 3524
Seedlings, 2385
Selection, artificial, 198
Temperature, effect of, 151–2
Translocation, 3526, 3528, 4894
X rays, 3527–8, 3957, 4895
Varieties, 119, 1458, 2384–5, 2637, 2639, 2642, 4866, 4891–2
Variety trials, 1046, 2388–9, 2392, 4883–5
Vernalization, 3531
Viruses, 2391, 3530, 3958, 4897
Plagiostoma
Populus. Poplar, 2275
Plane, *see Platanus*
Plasmagenes, *see* cytoplasmic inheritance
Plasmopara
Helianthus. Sunflower, 2667
Vitis, 182, 3411, 3902
Plasmodiophora
Biotypes, 981, 1270, 3468, 3861
Brassica, 980
Brassica. Cabbage, 2324–5, 4776
Brassica. Swede, 2667, 3125
Plastids, 36, 40, 53, 1139, 2597, 3836
Beta. Sugar beet, 4510
Hordeum. Barley, 40
Plastids—*continued.*
Lycopersicon. Tomato, 1011
Pinus. Pine, 2289
Platanus
History and evolution, 4754
Platyedra
Gossypium. Cotton, 182
Pleiotropy, 1229
Lycopersicon. Tomato, 1008
Plum, *see Prunus*
Pococera
Gossypium. Cotton, 3960
Poa
Adaptation, 1360
Amphidiploidy, 569
Aneuploidy, 566, 1740–1
Apomixis, 142, 540, 1359, 3055
Breeding, 2676
Growth period, 540
Haploidy, 1382, 4279
History and evolution, 569
Hybridization, interspecific, 142, 540, 3948
Meiosis, 1382, 4279
Photoperiodism, 540
Pollen, 570
Pollination, 1322
Segregation, 142
Sterility, male, 1322
Taxonomy, 571
Temperature, effect of, 540, 570, 1322, 1382
Vegetative reproduction, 1742
X rays, 119, 3055
Podocarpaceae
Translocation, 4736
Podosphaera
Malus. Apple, 2075, 3793, 4595, 4622
Pollen, 2471, 2527, 2596–7
Aegilops, 4038
Allium. Onion, 2576
Andropogon, 584
Citrus. Lemon, 892
Corchorus. Jute, 745, 3221, 4480
Crop plants, 1371
Crotalaria, 4359
Cucumis. Melon, 2334
Diospyros. Kaki, 3368
Elymus, 3074
Gossypium. Cotton, 1869
Hordeum. Barley, 493
Lycopersicon. Tomato, 208, 688, 1021
Malus. Apple, 208
Nicotiana. Tobacco, 1988, 2676
Pinus. Pine, 4761
Pisum. Pea, 688
Poa, 570
Prunus. Plum, 1270
Pyrus. Pear, 208
Secale. Rye, 4139
Sesbania, 4359
Solanum. Potato, 688, 3143, 4396
Triticum. Wheat, 2874, 4038
Vitis, 174
Zea. Maize, 456, 4186, 4190
Pollination, 2594, 3777, 3781
Agropyron, 3076–7
Alopecurus, 591
Anacardium. Cashew, 4664
Beta. Sugar beet, 779, 1936, 1963
Brassica. Brussels sprouts, 1270
Bromus, 579
Carthamus. Safflower, 3305
Castanea. Chestnut, 4660
Chrysanthemum, as insecticide, 3932
Cichorium. Chicory, 1259
Cocos. Coconut, 863

Pollination—*continued.*
Coffea. Coffee, 2010
Cucumis. Cucumber, 4828
Cucumis. Melon, 988
Cucurbita, 994
Elaeis. Oil palm, 858, 865, 2043
Forest trees, 2270, 3418
Gossypium. Cotton, 93, 1868, 4455
Grasses, 567
Helianthus. Sunflower, 3302
Hevea. Rubber, 2664
Hordeum. Barley, 1349
Lactuca. Lettuce, 4817
Leguminous forage crops, 558
Lupinus. Lupin, 3110
Lycopersicon. Tomato, 92, 1019, 2357, 3495, 4848
Malus. Apple, 2083, 2106–7, 4609
Medicago, 3087
Nicotiana. Tobacco, 1358
Oryza. Rice, 4256
Passiflora, 3376
Persea. Avocado, 2182
Phleum, 2632
Pisum. Pea, 92
Poa, 1322
Prunus. Cherry, 2137, 4641
Pyrus. Pear, 2106
Raphanus. Radish, 1270
Ribes. Black currant, 3380
Ribes. Red currant, 3380
Robinia, 2284
Secale. Rye, 374, 378
Setaria, 3069
Solanum. Potato, 3141
Sorghum, 3069, 4298
Theobroma. Cacao, 814–5, 3273, 4550
Trifolium. Red clover, 1730, 1774, 2632
Triticum. Wheat, 58, 93, 300–2, 1349, 1517–8, 2771, 4031, 4061
Vicia. Broad bean, 4863
Zea. Maize, 58, 1629
Polyembryony
Capsicum, 3955
Citrus, 3362
Gossypium. Cotton, 3203
Zea. Maize, 3955
Polygenes, *see* multiple genes
Polyhaploidy
Secale. Rye, 274
Triticum. Wheat, 274
Polymeric genes, *see* multiple genes
Polyphenols
Malus. Apple, 2115–6
Pyrus. Pear, 2116
Polyploidy, 67, 88, 1160, 1206, 1212–4, 1217, 2526, 2561–2, 3629, 3653, 3827, 3902, 3918
Acacia, for tanning, 2045
Acorus, 3627
Aegilops, 347
Allium, 1215, 4798
Alnus. Alder, 3431
Amorphophallus, 3249
Andropogon, 584
Arrhenatherum, 1730
Artemisia, 1270, 2049–51, 3309
Asparagus, 1260, 2319
Aspergillus, 2509
Avena. Oats, 136, 1304, 2887
Beta, 119, 1792
Beta. Beetroot, 1270
Beta. Mangel, 1797
Beta. Sugar beet, 777–8, 1259, 1942, 1947–9, 2474, 2476, 3245, 3812, 3877–8, 4505, 459–11
Bothriochloa, 3064, 3772
Polyploidy—*continued.*
Brassica. Cabbage, 4805
Brassica. Rape, 119, 1730
Brassica. Swede, 1730
Brassica. Toria, 838
Brassica. Turnip, 119, 2642
Bromus, 578
Casuarina, 4753
Cereals, 127, 235
Cicer. Chickpea, 3533
Citrullus. Water melon, 2337, 2483, 3875
Coffea. Coffee, 2006, 2664
Corchorus. Jute, 3220
Coriandrum, 3548
Crop plants, 186, 189, 2479, 2483, 3985
Cryptomeria, 960
Cucumis. Cucumber, 2343, 3443
Cucumis. Melon, 2334
Dactylis, 1730
Datura, 1270, 3822
Deschampsia, 4299
Dichanthium, 3772
Digitalis, 867, 1270
Edgeworthia, 3226
Fagopyrum. Buckwheat, 2875–6
Festuca, 1730
Forest trees, 3416
Gossypium. Cotton, 1386, 1865, 2664
Grasses, 1731, 3050
Haynaldia, 4303
Hordeum. Barley, 119, 1273, 1297, 2960, 3619
Humulus. Hop, 2014
Ipomoea. Sweet potato, 3912
Lagenaria, 2337
Lathyrus, 622
Leguminous forage crops, 596
Lolium, 1730, 3049, 3861, 4289
Lotus. Birdsfoot trefoil, 1726, 4360
Lycopersicon. Tomato, 4844–5
Malus. Apple, 181, 880, 1270, 3331, 4597
Manihot. Cassava, 3912
Medicago, 119, 1761–2, 3049, 3086, 3090, 3989
Melilotus. Sweet clover, 1776
Mentha, 4909
Momordica, 995
Mucuna. Velvet bean, 1779
Musa. Banana, 2206, 2664
Nicotiana. Tobacco, 3258, 4532
Ornithopus, 1730, 1790
Oryza. Rice, 522, 530, 2664, 4249
Paspalum, 1314
Phalaris, 1748
Phleum, 1730, 1743
Pinus. Pine, 97, 2289–9
Pisum. Pea, 3727
Populus. Poplar, 4744
Prunus. Apricot, 2667
Prunus. Cherry, 1270, 2081
Prunus. Plum, 2081
Pyrus. Pear, 1270, 2080
Raphanus. Radish, 1270, 2483, 3457
Ribes. Black currant, 4594
Ribes. Red currant, 1270
Rubus, 4597, 4683
Saccharomyces, 4922
Saccharum. Sugar cane, 3227
Secale. Rye, 119, 371–3, 375, 1244, 1273, 1420, 1604, 2896–8, 3861, 3989, 4139
Sesamum. Sesame, 2037
Solanum. Potato, 671, 685, 1813–4
Sorghum, 158, 2659, 3933
Thea. Tea, 2478, 3268, 4542
Trifolium, 596
Trifolium. Alsike clover, 1305
Trifolium. Minor species, 1776, 3102

Polyploidy—*continued.*
Trifolium. Red clover, 119, 134, 548, 1420, 1726, 1730, 1772–3, 4336–7
Trifolium. White clover, 119, 3049, 3099, 4342, 4344
Triticum. Wheat, 279, 296, 1539, 2778, 3893, 4033, 4055
Vitis, 2223, 2236–8, 3404, 4716
Zea. Maize, 4182
see also amphidiploidy
Polysomaty, *see* mixoploidy
Polysomics, *see* aneuploidy
Polyspora
Biotypes, 107
Linum. Flax, 107
Pome fruits
Breeding, 1299
Cold resistance, 1260
Introduction, plant, 3328
Pomegranate, *see Punica*
Pomelo, *see Citrus*
Poncirus
Grafting, 3365
Sex, 3364
Temperature, effect of, 3364
Popcorn, *see Zea*
Poplar, *see Populus*
Population genetics, 37–8, 1141–7, 2498, 2545–6, 3683–9, 3897–901
Grasses, 3786
Oryza. Rice, 3883–4
Setaria, 3881
Populus. Poplar
Breeding, 182, 2249, 2257, 2266, 4744–5
Cold resistance, 2247
Cytospora, 3428, 4748
Degeneration, 955
Dothichiza, 3427–8, 4748
Fusarium, 3428, 4748
Habit, 4747
Haploidy, 2272
Heat, drought, resistance, 956
History and evolution, 3821
Hybridization, interspecific, 948, 950, 956, 2275–6, 3324, 3423–4, 3426–7, 4724, 4743, 4746
Melampsora, 957, 4747
Mycosphaerella, 957
Pemphigus, 2271
Photoperiodism, 2277
Phyllosticta, 957
Plagiostoma, 2275
Polyploidy, 4744
Pseudomonas, 2274, 4745–6
Quality of product, 2273, 4744
Root, 1238
Saperda, 2271
Sphaceloma, 957
Thecabius, 2271
Toxic soils, 956
Valsa, 2276
Variation, 2246
Varieties, 3425–6
Vegetative reproduction, 955
Potassium
Beta. Sugar beet, 783
Thea. Tea, 4544
Trifolium. Red clover, 4334
Vitis, 4710
Potato, *see Solanum*
Pratylenchus
Nicotiana. Tobacco, 177
Prickles, *see* spines
Proflavine
Vicia. Broad bean, 3769
β-Propiolactone, 1167, 3839
Protein, 28
Avena. Oats, 357
Cereals, 3997
Oryza. Rice, 522
Triticum. Wheat, 2870
Vigna. Cowpea, 1037
Zea. Maize, 458–9, 4189
Prunus. Almond
Breeding, 117, 2077, 2168, 2626, 4663
Cold resistance, 2075
Exoascus, 4663
Growth period, 2077
History and evolution, 4662
Hybridization, interspecific, 2626, 4661, 4663
Introduction, plant, 3328
Quality of product, 2626
Sclerotinia, 2077
Sterility, fertility, 2626
Taxonomy, 2170, 4662
Varieties, 2169
Prunus. Apricot
Breeding, 3349
Colchicine, 2667
Cold, effect of, 4633
Cold resistance, 2075–6, 3349, 4632
Geographical races, 2128
Grafting, 885
Growth period, 3328
Hybridization, 2082, 3328
Hybridization, wide, 3341, 4632
Introduction, plant, 3328
Mičurinism, 2125–6
Polyploidy, 2667
Quality of product, 2128, 3348, 3450–1
Varieties, 884, 2082, 2127, 3348
Prunus. Cherry
Anthocyanins, 2144
Biochemistry, 2095
Breeding, 887–8, 2081, 4634, 4639
Chromosome number, 4597
Colchicine, 1270, 2081
Cold resistance, 3354
Colour, 4632
Development, 2143
Fruit, 2144
Genetics, 3793
Grafting, 887–8, 3793
Habit, 3793
Hybridization, 4632
Hybridization, interspecific, 4601, 4640–1
Land races, 4644
Nitrous oxide, 2081
Pollination, 2137, 4641
Polyploidy, 1270, 2081
Quality of product, 2081, 3348, 3450–1, 4632, 4645
Sterility, self, 3353
Temperature, effect of, 2143
Variation, 3353
Varieties, 2087, 2095, 3348, 3353, 3797, 4642–3
Variety trials, 2145
Prunus. Nectarine
Breeding, 3357
Cold resistance, 3357
Prunus. Peach
Ascospora, 2082
Breeding, 175, 182, 889, 2150, 3357, 4601, 4646, 4651
Ceratitis, 3359
Clasterosporium, 4632
Cold resistance, 2075, 2153–4, 3357
Flower, 2151
Genetics, 3356
Grafting, 889
Growth period, 2150, 2152, 3359
History and evolution, 4648
Hybridization, 2146–7
Hybridization, interspecific, 3965, 4632

Prunus. Peach—*continued.*
Inbreeding, 3356
Introduction, plant, 3328
Meloidogyne, 889, 2141
Mičurinism, 2154
Pathology, 4649
Phytophthora, 1428, 4650
Pseudomonas, 3358
Quality of product, 2152, 3450–1, 4632
Radopholus, 889
Taphrina, 2082
Taxonomy, 4648
Temperature, effect of, 4651
Ultraviolet rays, 1428, 4650
Varieties, 889, 2148–9, 3328, 4646–7
Variety trials, 3355
X rays, 1428
Prunus. Plum
Biochemistry, 2095
Breeding, 2129–32, 2140, 4601, 4634, 4639
Chromosome number, 4597
Clasterosporium, 4632, 4638
Colchicine, 2081
Cold resistance, 2081, 2129, 2139–40, 3352, 4636
Dormancy, 2136
Flower, 3350, 3352
Fruit, 3350
History and evolution, 2133
Hybridization, 4638
Hybridization, interspecific, 886, 2081, 2129, 2133, 2139, 3965, 4601
Hybridization, wide, 4632
Meloidogyne, 2141
Mičurinism, 2125–6
Nitrous oxide, 2081
Pollen, 1270
Polyploidy, 2081
Quality of product, 2073, 2075, 2138, 2140, 3351, 4636
Reproduction, 2136
Stereum, 1270
Sterility, fertility, 886, 2137
Sterility, self, 886
Taxonomy, 4636
Varieties, 2087, 2095, 2134–5, 2138–9, 3350, 4635–6, 4643
Variety trials, 3352, 4604
Viruses, 2142, 4590, 4637–8
Psalliota
Chromosome number, 1066
Pseudomonas
Glycine. Soya bean, 4882
Medicago, 1767
Nicotiana. Tobacco, 1991
Phaseolus, 2367, 3512
Populus. Poplar, 2274, 4745–6
Prunus. Peach, 3358
Pyrus. Pear, 4628
Sesamum. Sesame, 848
Solanum. Potato, 660, 671
Variation, 3358
Pseudoperonospora
Citrullus. Water melon, 992
Cucumis. Cucumber, 175, 3957, 4828
Cucumis. Melon, 175
Humulus. Hop, 824–5, 831, 2017
Pseudopeziza
Biotypes, 4329
Pseudotsuga. Douglas fir
Apomixis, 3442
Chermes, 4769
Cold resistance, 2252, 2254
Ecotypes, 967
Embryology, 2297
Geographical races, 954, 2296
Inbreeding, 3441
Pseudotsuga. Douglas fir—*continued.*
Phaeocryptopus, 95
Photoperiodism, 954, 967
Sterility, self, 2297, 3441
Psila
Daucus. Carrot, 4785
Pterocallidium, see Therioaphis
Puccinia
Aegilops, 184, 1259
Agropyron, 277–8, 1259, 2667
Aminoacids, 2856
Asparagus, 181
Avena. Oats, 175, 181, 364, 366, 1260, 1341, 1442, 1566, 1594–5, 2667, 2678, 2726, 2848, 2893, 4122, 4131–3
Berberis. Barberry, 2849
Biochemistry, 247
Biotypes, 182, 245–7, 332–40, 364, 433, 499, 1294, 1341, 1427, 1430, 1446, 1450, 1455, 1494–5, 1561–8, 2492, 2628, 2682, 2733, 2783, 2796, 2804–5, 2809–10, 2812–20, 2822–6, 2830–47, 2852, 2855–6, 2863, 2865–9, 2891–2, 2954, 3620, 3861, 3932, 3957, 3997, 4087–105, 4122, 4132–3
Carthamus. Safflower, 4574
Cereals, 128, 247
Cold resistance, 2850
Colour, 1678
Dactylis, 3957
Geography, 2955
Helianthus. Sunflower, 182
Hordeum. Barley, 499, 1466, 1566, 1678, 2848
Lolium, 1364, 3036, 3040, 3957, 3962
Mutation, induced, 4107
Mutation, spontaneous, 330–1, 1678, 4101
Saccharum. Sugar cane, 122
Secale. Rye, 175, 182, 1487, 2848, 3989
Serology, 339
Sorghum, 1309
Taxonomy, 338
Trimethylethylene, 2854
Triticum. Wheat, 121–2, 149, 175, 184, 277–8, 319, 326–41, 1259, 1273, 1279, 1296, 1364, 1466, 1473, 1487, 1502, 1538, 1555–70, 2627, 2648, 2654, 2667–8, 2671, 2677–8, 2680, 2682–3, 2720, 2738, 2790–2, 2795–857, 2862–70, 3792, 3902, 3956, 3962, 3989, 4023, 4034, 4086–107
Ultraviolet rays, 4107
Zea. Maize, 129, 131, 133, 399, 408, 414, 424, 467, 1294–5, 1343, 1642, 2666, 2953–5, 3931–2, 3935, 3958
Pulses
Breeding, 1029
Cysteine, 4859
Introduction, plant, 3586
Methionine, 4859
Seed, 3841
Tryptophane, 4859
Variety trials, 1029
Pumpkin, *see Cucurbita*
Punched cards, 677, 3783
Punica. Pomegranate
Quality of product, 908
Varieties, 908
Pure lines, 3665
Pyrausta
Zea. Maize, 1272, 1645–6, 4169, 4198–9
Zea. Sweet corn, 2677
Pyrenophora
Hordeum. Barley, 2667, 2983
Pyrethrum, see Chrysanthemum, as insectide
Pyridoxine
Vitis, 936
Pyrus. Pear
Breeding, 2080, 3339, 4629
Chromosome aberrations, 3793
Colchicine, 1270

Pyrus. Pear—*continued*.
Cold resistance, 882, 3335, 3346, 4619
Colour, 3329
Dormancy, 2106, 3346
Embryo, 4627
Erwinia, 3339, 3344, 4629
History and evolution, 2121
Hybridization, graft, 3341
Hybridization, intergeneric, 877, 2080, 4589, 4606
Hybridization, interspecific, 2121
Land races, 2088
Lethals, 2122
Multiple alleles, 3345
Mutation, induced, 3697
Mutation, somatic, 3340
Pollen, 208
Pollination, 2106
Polyphenols, 2116
Polyploidy, 1270, 2080
Pseudomonas, 4628
Quality of product, 2073, 2080
Radioactive isotopes, 3697
Reproduction, 4627
Sterility, fertility, 2122, 3345
Taxonomy, 2123
Varieties, 2069, 2087, 2119–20, 2123, 3342–4, 3603, 4626
Venturia, 2116
see also Malus
Pythium
Pisum. Pea, 2671
Zea. Sweet corn, 3538
Zea. Maize, 4195

QUALITY OF PRODUCT

Allium. Onion, 973–4, 2677
Anacardium. Cashew, 1295
Arachis. Groundnut, 902
Artemisia, 1270, 2050
Aspergillus, 4913
Atropa, 2052
Avena. Oats, 1587–8, 4127
Beta. Beetroot, 2300, 3856
Beta. Mangel, 1798
Beta. Sugar beet, 1276, 1956–78, 1981, 2090, 2638, 4508, 4516
Brassica. Brussels sprouts, 4807
Brassica. Cabbage, 2302, 2322–3, 3445, 3856, 4807
Brassica. Kale, 4807
Brassica. Kohl rabi, 4807
Brassica. Rape, 1260, 2026
Brassica. Swede, 3124
Camelina, 3855
Cannabis. Hemp, 1899
Capsicum, 2024
Carthamus. Safflower, 3304
Cereals, 1092, 1460
Citrullus. Water melon, 990, 2338, 3484, 3875, 3880, 4825
Citrus. Orange, 3363
Coriandrum, 2400
Cornus, 4675
Crop plants, 3986
Cucumis. Cucumber, 2301–2, 4832
Cucumis. Melon, 1270, 2300, 2335, 3961
Cucurbita, 2300–2, 2338, 2340
Daucus. Carrot, 3453, 3856
Digitalis, 867
Elaeis. Oil palm, 2044
Essential oil plants, 117
Festuca, 1336, 3031, 4290
Ficus. Fig, 895, 2077
Forest trees, 4738
Fragaria. Strawberry, 929, 2073, 2201, 3450–1
Glycine. Soya bean, 1041, 2377, 2664
Quality of product—*continued*.
Gossypium. Cotton, 157, 182, 727–31, 1263–4, 1847, 1864, 1874–82, 1884, 1886, 2648, 2658, 2664, 3177–8, 3190, 3204–10, 3212, 4436–7, 4443, 4446, 4456–7
Grasses, 1733, 3031, 3053
Helianthus. Sunflower, 855, 1264
Hevea. Rubber, 2058
Hordeum. Barley, 472–3, 494–7, 1246, 1364, 1669–74, 2960–1, 2976–8, 3997, 4006, 4008, 4204–5, 4220–1
Humulus. Hop, 828–9, 2015–6
Ipomoea. Sweet potato, 162, 710, 2670, 3168, 3955
Juglans. Walnut, 2163
Larix. Larch, 949
Leguminous forage crops, 3053
Lespedeza, 153, 3031
Linum. Flax, 1895, 1898, 3215–6, 4472
Linum. Linseed, 3298
Lupinus. Lupin, 1782, 1787–8, 2637, 3107, 3111
Lycopersicon. Tomato, 166, 182, 1022, 1259, 1276, 2298, 2300, 2360, 2670, 3497–8, 4848–9
Malus. Apple, 2080, 2101–2, 2117, 3452, 4614
Melilotus. Sweet clover, 616, 4352–3
Mentha, 2402, 3542, 4909–10
Miscanthus, 1750
Musa, for fibre, 750, 1902
Nephelium. Litchi, 2171
Nicotiana. Tobacco, 171, 1276, 1995–6, 3260, 4529–30, 4534–6, 4539
Oil plants, 1263, 3285
Olea. Olive, 117
Oryza. Rice, 525–6, 1711, 2664, 2994, 2997, 3008–9, 4258–9
Papaver. Poppy, 4553
Pelargonium, 4556
Phaseolus, 2072, 2670–1, 3960
Phleum, 1356
Phoenix. Date, 2177
Picea. Spruce, 949, 966
Pinus. Pine, 1243, 2245, 2288, 3438, 4762–5
Pisum. Pea, 2072, 2387–9, 3529, 4885–6
Populus. Poplar, 2273, 4744
Prunus. Almond, 2626
Prunus. Apricot, 2128, 3348, 3450–1
Prunus. Cherry, 2081, 3348, 3450–1, 4632, 4645
Prunus. Peach, 2152, 3450–1, 4632
Prunus. Plum, 2073, 2075, 2138, 2140, 3351, 4636
Punica. Pomegranate, 908
Pyrus. Pear, 2073, 2080
Ribes. Black currant, 2068, 4688
Rosa, 2021
Rubus. Raspberry, 916, 2073, 3450–1, 4594
Saccharomyces, 2413, 3556
Saccharum. Sugar cane, 757, 768, 1908, 1920–1, 3229, 4492
Secale. Rye, 1453, 1605, 2898
Solanum. Potato, 629, 674, 689–90, 1364, 1805, 1818–20, 2635, 3142, 3144–9, 4397–8, 4408
Sorghum, 2670–1, 3068
Sorghum, for sugar, 773
Spinacia. Spinach, 2073
Thea. Tea, 2003, 3271
Theobroma. Cacao, 4551
Thymus. Thyme, 3541
Trifolium. Red clover, 4338
Triticum. Wheat, 113, 182, 258, 262, 305–13, 320, 1246, 1269, 1313, 1364, 1451–2, 1455, 1495, 1527–31, 1535, 2631, 2637–8, 2667, 2723, 2725, 2740, 2747, 2775–9, 2798, 2858, 3808, 3817, 3962, 4008, 4044, 4059, 4067–73, 4077
Vegetable crops, 969
Vicia. Broad bean, 1270, 2073
Vigna. Cowpea, 161, 1038, 3514–5
Vitis, 942–3, 2076, 2128, 3402, 4713–6
Voandzeia, 1791
Zea. Maize, 2900, 2909, 2945, 4199

Quality of product—*continued.*
Zea. Popcorn, 3540
Zea. Sweet corn, 2301–2
see also vitamins
Quantitative characters, 18, 187–8, 1122–4, 2499, 3648
Acacia, for tanning, 2045, 4576
Acer, 3422
Arachis. Groundnut, 3971
Crop plants, 3920
Glycine. Soya bean, 1339, 2375
Gossypium. Cotton, 3177, 4457
Hordeum. Barley, 1668, 4215–6
Lolium, 3058
Lycopersicon. Tomato, 1004, 2503, 3794
Medicago, 3088
Nicotiana. Tobacco, 1125, 1994
Oryza. Rice, 529, 2500, 3000, 4240
Pisum. Pea, 3530
Solanum. Egg plant, 3885
Triticum. Wheat, 308, 1526, 3939
Vitis, 4706
Zea. Maize, 458, 1615, 2940, 4153
Quelea
Sorghum, 514
Quercus. Oak
Endoconidiophora, 181
Endothia, 2166
Geographical races, 2263
History and evolution, 4740
Hybridization, interspecific, 3419
Leaf, 4741
Microsphaera, 3421
Taxonomy, 4742
Vegetative reproduction, 3420
Quince, *see Cydonia*

RACES, *see* biotypes, geographical races, and land races
Radiation, 46–50, 87, 201, 1068, 1327, 1400, 2508, 2525, 2607, 3637, 3639, 3740, 3918, 4930, 4934
Avena. Oats, 1304, 3045
Brassica. Cabbage, 4776
Cereals, 2698
Crop plants, 193, 203–4, 1069–70, 1224–5, 1304, 1312, 1333, 1368, 1409–10, 2422, 2668, 2691–4, 2696, 2700, 3784–5, 3803, 3968–70, 3973–6
Fruit crops, 2697
Grasses, 3030, 3045
Hordeum. Barley, 182, 2695, 2720
Leguminous forage crops, 3030, 3045
Lespedeza, 3045
Lupinus. Lupin, 3045
Malus. Apple, 2080
Picea. Spruce, 2293
Secale. Rye, 3045
Triticum. Wheat, 2868
Radioactive isotopes, 44, 1163, 3667, 3680
Crop plants, 3810
Digitalis, 3793, 3942
Gossypium. Cotton, 93
Lycopersicon. Tomato, 3942
Malus. Apple, 3697, 3942
Pyrus. Pear, 3697
Saccharomyces, 3551
Secale. Rye, 2628
Triticum. Wheat, 93, 251, 318, 3615
Zea. Maize, 4186
Radish, *see Raphanus*
Radopholus
Prunus. Peach, 889
Rai, *see Brassica*
Rape, *see Brassica*
Raphanus. Radish
Aneuploidy, 4780
Breeding, 3794
Colchicine, 1270
Raphanus. Radish—*continued.*
Development, abnormal, 3456
History and evolution, 2313
Osmosis, 3458
Pollination, 1270
Polyploidy, 1270, 2483, 3457
Seedlings, 3794
Sterility, fertility, 2312, 3457–8, 4782
Sterility, male, 970
Taxonomy, 2313
Temperature, effect of, 2312
Varieties, 3584, 4771
Viruses, 4786
Raspberry, *see Rubus*
Rays, *see* radiation
Recessiveness, *see* dominance
Recombination, *see* segregation
Red clover, *see Trifolium*
Red currant, *see Ribes*
Reed grass, *see Phalaris*
Reproduction, 3775
Brachiaria, 3932
Cenchrus, 3932
Chloris, 3932
Crop plants, 3927
Feijoa, 4658
Melinis, 3932
Prunus. Plum, 2136
Pyrus. Pear, 4627
Saccharomyces, 3555, 4206
Tilletia, 1552
Zea. Maize, 2941
Resorcinol, 84
Respiration, 94, 1162, 3759
Brassica. Cabbage, 2089
Saccharomyces, 1065, 3834, 4923
Triticum. Wheat, 1569
Rheum. Rhubarb
Breeding, 2046
Rhizobium
Leguminous forage crops, 537, 596
Trifolium. Red clover, 607–8
Varieties, 537
Rhizoctonia
Corchorus. Jute, 3220
see also Pellicularia
Rhizome
Sorghum, 4232
Rhodes grass, *see Chloris*
Rhodoturula
Mutation, induced, 2624
Ultraviolet rays, 2624
Rhopalosiphum
Sorghum, 515
Rhubarb, *see Rheum*
Rhynchosporium
Biotypes, 1435, 2734
Hordeum. Barley, 1455, 2985, 3956
Ribes
Breeding, 920
Cold resistance, 920
Hybridization, interspecific, 4589, 4597
Meiosis, 4589, 4597
Taxonomy, 4597
Ribes. Black currant
Ascorbic acid, 1270
Breeding, 874, 920, 3381, 4582
Colchicine, 4594
Cold resistance, 874, 2190
Colletotrichum, 920
Development, 3380, 4688
Fruit, 4594
Hormones, 3380
Hybridization, 3380
Hybridization, interspecific, 2083, 4584, 4594

Ribes. Black currant—*continued.*
Hybridization, wide, 2083, 2188
Inflorescence, 4594
Mutation, somatic, 922
Pollination, 3380
Polyploidy, 4594
Quality of product, 2068, 4688
Size, 4594
Sterility, self, 4687
Varieties, 2189–90, 3381
Variety trials, 921, 2191, 4604
X rays, 922
Ribes. Gooseberry
Breeding, 923, 2083, 4594
Cold resistance, 923
Hybridization, interspecific, 2083, 4594
Sphaerotheca, 923, 2083, 2193–4, 3382
Spines, 2192, 4594
Sterility, self, 4594
Varieties, 923, 2087, 2193–4
Ribes. Red currant
Colchicine, 1270
Colletotrichum, 920
Development, 3380
Growth period, 4596
Hormones, 3380
Hybridization, interspecific, 3380, 4584
Mutation, somatic, 4596
Pollination, 3380
Polyploidy, 1270
Sterility, self, 4687
Varieties, 920, 2087
Variety trials, 2187
Riboflavin
Avena. Oats, 357
Rice, *see Oryza*
Rice grass, *see Oryzopsis*
Ricinus. Castor oil plant
Breeding, 1261, 3913
Cell division, 4565
Chromosome number, 100, 4565
Cytoplasmic inheritance, 843
Genetics, 2032, 3294, 3913
Hybridization, 2033, 3295–6
Meiosis, 4565
Sex, 843, 1397, 2033
Taxonomy, 100
Varieties, 842, 3295–6, 3961
Variety trials, 841, 4564
Rindite
Solanum. Potato, 1816
Robinia
Pollination, 2284
Root
Beta, 4364
Daucus. Carrot, 4784
Grasses, 1739
Medicago, 1765, 2676, 4327
Oryza. Rice, 523
Populus. Poplar, 1238
Saccharum. Sugar cane, 1919
Secale. Rye, 237
Solanum. Potato, 3163
Triticum. Wheat, 237
Vitis, 2240
Zea. Maize, 2937
Rootstock, *see* grafting
Rosa
Breeding, 2021
Quality of product, 2021
Varieties, 4555
Roselle, *see Hibiscus*
Rubber, *see Hevea*
Rubus
Apomixis, 2183
Rubus—continued.
Cell division, 4683
Chromosome number, 4597, 4681–2
Hybridization, interspecific, 175, 912–4, 2075, 2183, 2669, 4597, 4683
Inflorescence, 2184
Meiosis, 912–4, 4683
Polyploidy, 4597, 4683
Spines, 4683
Taxonomy, 915
Rubus. Blackberry
Breeding, 919, 4686
Cold resistance, 919
Genetics, 919
Germination, 917
Hybridization, interspecific, 2080
Spines, 919
Varieties, 2186
Rubus. Raspberry
Amphorophora, 918, 3379, 4589
Botrytis, 4589, 4594
Breeding, 2185, 4582, 4589, 4594
Didymella, 4589
Elsinoe, 4594
Genetics, 4594
Germination, 917
Growth period, 4594
Habit, 4594
Hairs, 4594
Heat, drought, resistance, 2083
Hybridization, interspecific, 2080, 4594, 4684
Inbreeding, 4594
Mičurinism, 4684
Quality of product, 916, 2073, 3450–1, 4594
Spines, 4594
Sterility, male, 4594
Varieties, 181, 916, 2087, 2185, 2431, 4685
Variety trials, 4604
Viruses, 4594
Rumex. Sorrel
Sex chromosomes, 3631
Ruta
Essential oils, 4578
Rutabaga, *see Brassica*
Rye, *see Secale*
Ryegrass, *see Lolium*

SACCHAROMYCES, 54, 474, 1132, 1162, 1384, 1390, 1395, 1401, 2452, 3637, 3640, 3650, 3839, 4926
Actidione, 2491
Adaptation, 1058–60, 2411, 2488–9, 4919
Biochemistry, 4917
Breeding, 2408, 2413, 4206
Cadmium, 2491
Copper, 1058–60, 2488
Cytology, 4915, 4920
Cytoplasm, 4923
Cytoplasmic inheritance, 2410
Enzymes, 2520, 3552
Fertilization, sexual, 4924
Fluoride, sodium, 2411
Genetics, 1065, 2408, 2491, 2520, 3552
Heterocaryosis, 2410
Light, effect of, 4206
Meiosis, 4924
Mutation, 1062
Mutation, back, 4918
Mutation, induced, 1063, 4917
Mutation, spontaneous, 2409, 3834
Nucleus, 2412, 3553–4, 4921
Polyploidy, 4922
Quality of product, 2413, 3556
Radioactive isotopes, 3551
Reproduction, 3555, 4206
Respiration, 1065, 3834, 4923

Saccharomyces—continued.
Segregation, 1061
Sex, 1064
Taxonomy, 3557, 4925
Transformation, 4916
Ultraviolet rays, 1063
Varieties, 4206, 4925
Saccharum. Sugar cane
Apomixis, 1918
Breeding, 756, 764, 1365, 1906, 1920–2, 3227–8, 3232–3, 3916, 4484, 4486, 4488–9
Chromosome morphology, 766
Chromosome number, 765–6, 1912, 3227, 3236, 4491
Colchicine, 3227
2,4-D, 1919
Diatraea, 122, 1909–10, 3242, 3961, 4493
Growth period, 1907–8, 1917, 4492
Heat, drought, resistance, 3239
History and evolution, 1916, 3238
Hybridization, 1911
Hybridization, intergeneric, 2475, 2496, 3227
Hybridization, interspecific, 765–6, 1912, 3227, 3915
Introduction, plant, 1922, 3227, 3233
Lodging, 3240, 4493
Meiosis, 1912, 2475, 3227
Nitrogen, 770, 1923
Pathology, 3915
Photoperiodism, 3227
Physalospora, 132, 771, 3233, 3915
Polyploidy, 3227
Puccinia, 122
Quality of product, 757, 768, 1908, 1920–1, 3229, 4492
Root, 1919
Seed storage, 3227
Starch, 2496
Statistics. Experimental designs, 3237
Stem, 3237, 4493
Sterility, male, 3227
Taxonomy, 3238
Tillage, 769
Tillering, 3242
Ustilago, 3915
Varieties, 182, 767, 1093, 1913–5, 3232, 3234–5, 4485, 4487
Variety trials, 753–5, 757–63, 1925–8, 3230–1, 3242, 4486, 4490
Viruses, 772, 1918, 3915
Water balance, 3239
Xanthomonas, 1924
Safflower, *see Carthamus*
Sage, *see Salvia*
Sainfoin, *see Onobrychis*
Salicylic acid, 2587
Salinity, *see* toxic soils
Salix. Willow
Breeding, 110
Colchicine, 182
Cryptorrhynchus, 1905
Formol, 182
Hybridization, interspecific, 182, 3324
Taxonomy, 3433
Salvia. Sage
Breeding, 2046
Genetics, 4908
Sex, 4908
Varieties, 4555
Sambucus. Elder
Breeding, 925, 2669
Hybridization, interspecific, 2669
Santonin
Artemisia, 3310
Saperda
Populus. Poplar, 2271
Sapium
Chromosome number, 2027
Sapogenins
Dioscorea. Yam, 4521
Sarson, *see Brassica*
Schizaphis
Secale. Rye, 182, 379
Scion, *see* grafting
Sclerostachya
Hybridization, intergeneric, 3227
Sclerotinia
Helianthus. Jerusalem artichoke, 4789
Malus. Apple, 2115
Prunus. Almond, 2077
Trifolium. Red clover, 1730, 3094, 4339
Sclerotium, see Pellicularia
Scorch
Brassica. Cauliflower, 985
Secale. Rye
Amphidiploidy, 280–1, 3989
Aneuploidy, 370, 1599, 1602–3, 2473, 4276
Apomixis, 275, 4041
2(3)-Benzoxazolinone, 1608
Breeding, 182, 1462, 3855, 3957, 3994
Calonectria, 1608
Cell division, 1603
Chromosome aberrations, 369, 373, 4136
Chromosome morphology, 1601
Chromosome number, 1484
Claviceps, 4140
Colchicine, 4114
Cold resistance, 1420
Colour, 368
Cosmic rays, 2895
Crossing over, 4135
Density of stand, 1462
Development, 2899
Erysiphe, 3989
Genetics, 368, 375
Genome analysis, 271
Germination, 237
Heterosis, 1598
History and evolution, 1599, 1602, 1607, 4138
Hybridization, 379, 1348, 1597
Hybridization, intergeneric, 110, 175, 271–5, 1425, 1479, 1483–7, 1937, 2453, 2473, 2625, 2628, 2744, 3989, 4033, 4039–41, 4114
Hybridization, interspecific, 1599, 3848
Inflorescence, 1937
Introduction, plant, 376, 1606–7
Lethals, 4138
Lodging, 2898
Meiosis, 272–3, 280, 369, 1485–6
Mičurinism, 378
Mixed crops, 377
Multiple alleles, 1604
Mutation, induced, 2628, 2895, 3045
Neutrons, 175
Nucleus, 1190
Photoperiodism, 2899, 4013
Pollen, 4139
Pollination, 374, 378
Polyhaploidy, 274
Polyploidy, 119, 371–3, 375, 1244, 1273, 1420, 1604, 2896–8, 3861, 3989, 4139
Puccinia, 175, 182, 1487, 2848, 3989
Quality of product, 1453, 1605, 2898
Radiation, 3045
Radioactive isotopes, 2628
Root, 237
Schizaphis, 182, 379
Segregation, 369, 4135
Shedding, 377
Statistics. Experimental designs, 2718
Sterility, fertility, 175, 280, 3848, 4139
Sterility, self, 375, 1604, 4138
Temperature, effect of, 2899

Secale. Rye—*continued*.
Translocation, 1599, 3848
Urocystis, 378
Variation, 1601
Varieties, 114, 119, 1600, 3854, 4137
Variety trials, 230, 372, 1448
Vernalization, 1472, 4013
Viruses, 1425
Taxonomy, 3848
X rays, 175, 2897
Seed
Brassica. Mustard, 3480
Cicer. Chickpea, 4900
Cucurbita, 2671
Fragaria. Strawberry, 3386
Gossypium. Cotton, 3177
Lupinus. Lupin, 1782, 3107
Melilotus. Sweet clover, 4352
Phaseolus. Lima bean, 1036
Pisum. Pea, 3524
Pulses, 3841
Spinacia. Spinach, 3478
see also caryopsis
Seedlings
Lycopersicon. Tomato, 3496
Phaseolus, 1032
Picea. Spruce, 2258
Pisum. Pea, 2385
Raphanus. Radish, 3794
Seed production
Beta. Sugar beet, 1940, 2476, 3878
Brassica. Cabbage, 4808
Crop plants, 1418
Daucus. Carrot, 4784
Forest trees, 2265
Grasses, 2428
Helianthus. Sunflower, 2041
Hevea. Rubber, 869, 2059, 2063
Leguminous forage crops, 2428
Lolium, 2604
Lotus. Birdsfoot trefoil, 3114
Medicago, 3089, 4326
Nicotiana. Tobacco, 4523
Picea. Spruce, 3439
Trifolium. Red clover, 548
Trifolium. White clover, 4343
Yucca, 1901
Zea. Maize, 418–20
Seed storage
Beta, 103
Hordeum. Barley, 2960
Saccharum. Sugar cane, 3227
Seed testing
Picea. Spruce, 4734
Segregation, 21–2, 25, 70, 1127–8, 1387, 1444, 2523, 2531–2, 2571, 3651–7
Agropyron, 4043
Aspergillus, 2509
Cereals, 4004
Euchlaena, 442
Gossypium. Cotton, 721, 4445
Nicotiana. Tobacco, 171
Oryza. Rice, 1697
Penicillium, 2407
Phleum, 1743
Poa, 142
Saccharomyces, 1061
Secale. Rye, 369, 4135
Triticum. Wheat, 1477, 4043
Zea. Maize, 442
Selection, artificial, 35, 59–60, 1175, 1229–30, 2501, 3728
Beta, 4363
Beta. Beetroot, 3455
Beta. Sugar beet, 1945, 1964
Cichorium. Chicory, 2331
Selection, artificial—*continued*.
Crop plants, 206, 1228, 2607, 3813, 3838, 3981
Daucus. Carrot, 3453
Forest trees, 1233, 1239, 3417, 3887
Gossypium. Cotton, 132, 2678, 4425, 4447
Hordeum. Barley, 1656, 2960, 4215–6
Linum. Flax, 4469
Malus. Apple, 1231
Medicago, 3956
Oryza. Rice, 3013
Pennisetum, 2987
Pinus. Pine, 1234, 1240–2, 4758
Pisum. Pea, 198
Solanum. Potato, 2683
Thea. Tea, 3935
Trifolium. White clover, 3097
Triticum. Wheat, 198, 2751
Vitis, 4699
Zea. Maize, 405, 433, 2670, 2947, 4174
Zea. Popcorn, 3540
Selection, natural, 1218, 1401, 3688, 3690, 3779, 3898, 3900, 4932
Forest trees, 2268
Medicago, 597, 3089, 4326
Nicotiana. Tobacco, 1988
Oryza. Rice, 3883
Phaseolus, 2682
Trifolium. White clover, 181
Self sterility, *see* sterility, self
Sepal, *see* flower
Septoria
Apium. Celery, 175
Cannabis. Hemp, 3219
Hordeum. Barley, 2667, 4208
Triticum. Wheat, 175, 181, 342, 1259, 1441, 3956, 4023
see also Leptosphaeria
Sequoia
Heterosis, 948
Hybridization, wide, 948
Serology, 2517, 2529, 3896
Larix. Larch, 1237
Puccinia, 339
Solanum. Potato, 2607
Zea. Maize, 2486
Sesame, *see Sesamum*
Sesamia
Zea. Maize, 396, 4201
Sesamum. Sesame
Breeding, 844, 2038, 3913
Cytoplasmic inheritance, 2037
Fruit, 2660, 4567
Genetics, 3297, 3913
Growth period, 2660
Habit, 2679
Heat, drought, resistance, 4567
History and evolution, 2036
Polyploidy, 2037
Pseudomonas, 848
Shedding, 845–6, 2038, 2679, 3297, 4567
Taxonomy, 847
Varieties, 174, 845–6, 2034–5, 3585
Variety trials, 848, 2661–2, 2671, 4566
Sesbania
Pollen, 4359
Setaria
Breeding, 504–5, 1278, 1685, 3908, 4225–6
Caryopsis, 3881
Growth period, 2986
Heat, drought, resistance, 2986
Introduction, plant, 2986, 3820
Pollination, 3069
Population genetics, 3881
Varieties, 512

Sex, 89, 1217, 1396, 2523, 2531, 2540, 2589, 3561, 3734, 3833
Asparagus, 979, 2319
Borassus, 2176
Cannabis. Hemp, 1899, 3219, 4475–6
Cochliobolus, 2952
Cucumis. Cucumber, 999, 2344, 3488–9, 4827, 4831
Cucumis. Melon, 988
Elaeis. Oil palm, 862, 2042
Ginkgo, 4756
Phoenix, 2176
Phytophthora, 4406
Pinus. Pine, 3847
Poncirus, 3364
Ricinus. Castor oil plant, 843, 1397, 2033
Saccharomyces, 1064
Salvia. Sage, 4908
Spinacia. Spinach, 1385, 3478, 3582
Vitis, 937, 4709–10
Zea. Maize, 4184
Sex chromosomes
Ginkgo, 3435
Humulus. Hop, 827, 4554
Rumex. Sorrel, 3631
Shaddock, *see Citrus*
Shedding
Glycine. Soya bean, 3520, 3933
Gossypium. Cotton, 1867, 3201
Hordeum. Barley, 491, 497
Lotus. Birdsfoot trefoil, 619, 3114
Lupinus. Lupin, 3109
Secale. Rye, 377
Sesamum. Sesame, 845–6, 2038, 2679, 3297, 4567
Triticum. Wheat, 232, 1337, 1516, 1538, 2671
Sinapis, see Brassica
Sisal, *see Agave*
Sitanion
History and evolution, 2482
Hybridization, intergeneric, 2482
Sitonia
Melilotus. Sweet clover, 4354
Size
Capsicum, 3453
Cucurbita, 3486
Ipomoea, Sweet potato, 2648
Malus. Apple, 879
Olea. Olive, 3375
Picea. Spruce, 3414
Pinus. Pine, 3414
Ribes. Black currant, 4594
Sodium
Beta. Sugar beet, 783
Vitis, 2212, 2217, 2219
Soil nutrients, *see* nutrients
Soil pH
Chloris, 2660
Hordeum. Barley, 3996–7
Linum. Flax, 743
Soja, see Glycine
Solanin
Solanum. Potato, 705, 1835
Solanum. Egg plant
Colour, 3879
Fruit, 3879
Fungi, 3454
Genetics, 3879, 3885
Habit, 993
Hybridization, 1270
Hybridization, graft, 3503, 4856
Hybridization, wide, 993
Introduction, plant, 3504
Parthenocarpy, 3503
Quantitative characters, 3885
Taxonomy, 125
Varieties, 2363, 4857
Solanum. Egg plant—*continued*.
Verticillium, 3446, 3504
Solanum, for fruit
Chromosome number, 1196
Solanum. Potato, 1299, 4945
Bacterium, 691
Biochemistry, 1834, 4395
Breeding, 110, 628, 630–1, 633–7, 639–7, 649–58, 661–2, 666–8, 670, 673–5, 686, 699, 708, 1245, 1263, 1803–6, 1822, 1824, 1827, 2628, 2667, 2677, 3126–7, 3129, 3142, 3158, 3791, 3795, 3862, 3911, 4372–5, 4381, 4383–4, 4390, 4400, 4408, 4414
Caffeic acid, 698
Cell division, 2577
Chimeras, 4395
Chlorogenic acid, 692, 698, 4410
Chromosome aberrations, 4392–3
Chromosome morphology, 2607, 3140
Chromosome number, 1196, 2671, 3150
Colchicine, 671, 685
Cold resistance, 2633–5
Colour, 3795
Corynebacterium, 652
Cytoplasmic inheritance, 1808
2,4-D, 3132
Degeneration, 629, 682
Demissin, 1835
Development, 686
Development, abnormal, 1815
Dormancy, 1816
Embryology, 3131
Empoasca, 663
Endomitosis, 686
Enzymes, 4380
Fungi, 1259, 2677
Genetics, 669, 1825–6, 1828–9, 1831–2, 3154, 3786, 3795, 4382, 4403–5
Grafting, 680, 702, 1807
Growth period, 687, 1245, 1259, 1364, 1805, 4394
Haploidy, 4377–8
Heat, drought, resistance, 658, 2628, 3152
Heterodera, 107, 659, 703, 1831–2, 3162–3, 3786, 3861, 4411–5
History and evolution, 3139–40, 4417
Hybridization, 650, 1260, 1364, 3786
Hybridization, graft, 1809, 3160, 3717
Hybridization, interspecific, 107, 629, 637–8, 641, 650, 659–60, 663–5, 669, 671, 678–80, 697, 701, 704, 1259–60, 1805, 1807, 1813, 1827, 1832, 1835, 2577, 2628, 2633–4, 2667, 2671, 3130–2, 3142, 3795, 3852, 3854, 3960, 4377–8, 4380, 4385–6, 4392–3, 4399, 4405, 4415, 4419–20
Inbreeding, 650, 658, 681
Internal tuber necrosis, 672–3
Introduction, plant, 641, 1821
Leptinotarsa, 629, 678, 704–5, 1834–5, 2634, 4417
Meiosis, 679, 3143, 4385
Mičurinism, 3134, 3852
Multiple genes, 3155
Ovule, 4386
Pathology, 3142, 4399
Pellicularia, 629
Phenols, orthodihydric, 692
Photoperiodism, 628, 686, 1815, 4394, 4399, 4413
Phytophthora, 108, 629, 637, 639, 644, 650, 655–6, 661, 665, 667, 669–71, 693–4, 698, 1260, 1263, 1294, 1364, 1805, 1824, 2670–1, 2683, 3786, 3861, 3960, 4380, 4401–5, 4408
Pollen, 688, 3143, 4396
Pollination, 3141
Polyploidy, 671, 685, 1813–4
Pseudomonas, 660, 671
Quality of product, 629, 674, 689–90, 1364, 1805, 1818–20, 2635, 3142, 3144–9, 4397–8, 4408
Rindite, 1816

Solanum. Potato—continued.
Root, 3163
Selection, artificial, 2683
Serology, 2607
Solanin, 705, 1835
Spindling sprout, 2612
Spongospora, 629
Sprain, 1822
Starch, 629, 689–90, 1817
Statistics. Genetics, 3149
Sterility, fertility, 2607, 3131–2, 3142, 4392, 4396
Sterility, male, 3143
Sterility, self, 4393
Streptomyces, 629, 634, 640, 642–7, 656–8, 661, 666–7, 673, 692, 1297, 1823, 4400
Synchytrium, 629, 699, 702, 1263, 1805, 2637, 3133, 3156–8, 3160, 4390, 4408
Taxonomy, 2607, 3150, 4417
Temperature, effect of, 4398
Varieties, 119, 646, 683–4, 694, 1297, 1810–2, 1820, 3135–8, 4373, 4384, 4387–91
Variety trials, 180, 632, 648, 676–7, 1266, 1839–40, 3128, 3798, 4373, 4376
Vernalization, 1808
Verticillium, 636, 639, 643, 3161, 4379, 4409–10
Viruses, 107–8, 108, 634, 639, 643, 650, 653–4, 662, 694, 706–8, 1260, 1298, 1836–8, 2667, 3158, 3165, 3786, 3795, 4381, 4390–1, 4402, 4418–9
Yield, 3151
see also Lycopersicon
Somatic reduction
Sorghum, 510, 2990
Sorghum
Atherigona, 2660–1
Biochemistry, 231
Birds, 2671, 3933
Breeding, 121, 132–3, 159, 182, 231, 511, 514, 1261, 1278–9, 1687, 2670, 2992, 3902, 3908, 3930, 3933, 3957, 4296
Calandra, 2992, 3933
Carotene, 231, 4234
Chromosome number, 557, 1688, 4232, 4295
Colchicine, 132, 510, 2990, 3933
Diatraea, 182
Dormancy, 509
Endosperm, 2992, 4234
Flower, 3930
Fungi, 2660
Genetics, 1309, 1430, 2988, 3930, 4229
Growth period, 2671
Harvesting, 2660
Heat, drought, resistance, 511
Heterosis, 2989
History and evolution, 1688, 1690, 2659, 4295
Homozygosis, 510
Hybridization, 2989, 3067, 3957, 4230–1
Hybridization, intergeneric, 3227
Hybridization, interspecific, 122, 158, 511, 557, 586–7, 1688, 3068, 4232
Inflorescence, 3933
Leaf, 4229
Mutation, induced, 510, 2990
Neutrons, 2670
Pollination, 3069, 4298
Polyploidy, 158, 2659, 3933
Puccinia, 1309
Quality of product, 2670–1, 3068
Quelea, 514
Rhizome, 4232
Rhopalosiphum, 515
Somatic reduction, 510, 2990
Sphacelotheca, 122, 2991
Sterility, fertility, 3933, 4232
Sterility, male, 2659, 2671
Striga, 121–2, 3902, 3933
Sorghum—continued.
Taxonomy, 2660, 4295
Varieties, 182, 511–3, 1284, 1689, 4233, 4297
Variety trials, 126, 508, 1364, 2671, 3021, 3066
X rays, 2670
Sorghum, for sugar
Genetics, 4495
Hybridization, interspecific, 587
Lodging, 4495
Photoperiodism, 3243
Quality of product, 773
Varieties, 773, 4494
Sorgo, *see Sorghum*
Sorosporium
Zea. Maize, 1640
Sorrel, *see Rumex*
Southern pea, *see Vigna*
Sowing
Glycine. Soya bean, 2378
Triticum. Wheat, 317
Zea. Maize, 438, 4193
Soya bean, *see Glycine*
Sphaceloma
Populus. Poplar, 957
Sphacelotheca
Sorghum, 122, 2991
Temperature, effect of, 2991
Sphaerotheca
Fragaria. Strawberry, 15, 3387
Ribes. Gooseberry, 923, 2083, 2193–4, 3382
Spikelet, *see* flower
Spinach, *see Spinacia*
Spinacia. Spinach
Aneuploidy, 1385
Breeding, 4812
Chromosome number, 1385
Cold resistance, 3478
Fruit, 3478, 4813
Genetics, 3478, 4813
History and evolution, 3477
Hybridization, 2328, 3818
Peronospora, 3478
Quality of product, 2073
Seed, 3478
Sex, 1385, 3478, 3582
Variety trials, 3476
Viruses, 3478
Spindling sprout
Solanum. Potato, 2612
Spines
Citrus. Lemon, 893
Citrus. Orange, 893
Ribes. Gooseberry, 2192, 4594
Rubus, 4683
Rubus. Blackberry, 919
Rubus. Raspberry, 4594
Spongospora
Solanum. Potato, 629
Sporobolus
Taxonomy, 3072
Sports, *see* mutation
Sprain
Solanum. Potato, 1822
Spring habit, *see* growth period
Sprouting, *see* germination
Sprouting broccoli, *see Brassica*
Spruce, *see Picea*
Squash, *see Cucurbita*
Squirrel tail, *see Hordeum and Sitanion*
Stamen, *see* flower
Starch
Miscanthus, 2496
Saccharum. Sugar cane, 2496
Solanum. Potato, 629, 689–90, 1817
Zea. Maize, 448, 460, 2944

Statistics, 1095–103, 1223, 2414
Statistics. Biometry, 2, 1175
Brassica. Rape, 3290
Oryza. Rice, 528, 1714
Trifolium. Minor species, 3101
Zea. Maize, 421, 2947
Statistics. Experimental designs, 3–6, 1067, 1104–16, 1249–52, 2443–6, 3559, 3606–11, 3814, 3816
Allium. Onion, 973
Avena. Oats, 224, 1117
Beta. Mangel, 2598
Beta. Sugar beet, 4496–7
Crop plants, 2599, 2611
Glycine. Soya bean, 1039
Gossypium. Cotton, 4426
Helianthus. Jerusalem artichoke, 4787
Hordeum. Barley, 106
Ipomoea. Sweet potato, 3166
Lycopersicon. Tomato, 4849
Nicotiana. Tobacco, 1329
Oryza. Rice, 1691, 4235
Phaseolus. Lima bean, 3517
Saccharum. Sugar cane, 3237
Secale. Rye, 2718
Theobroma. Cacao, 1118
Triticum. Wheat, 7, 224, 2598, 2718, 3612
Zea. Maize, 437, 1610, 1637, 4141
Statistics. Genetics, 19, 22, 59, 187–8, 1120, 1122–4, 1146–7, 2417, 2499, 2501, 2526, 2667, 3648, 3659, 3687
Beta. Sugar beet, 1945
Brassica. Rape, 3289
Bromus, 575
Festuca, 3062
Forest trees, 3417, 3887
Glycine. Soya bean, 2375
Gossypium. Cotton, 1328, 4425, 4447, 4457
Holcus, 3062
Hordeum. Barley, 1656
Lolium, 547
Lycopersicon. Tomato, 1004, 2503
Nicotiana. Tobacco, 1125
Oryza. Rice, 2500
Solanum. Potato, 3149
Triticum. Wheat, 1522
Zea. Maize, 17, 1609, 1622, 4157
Stem
Avena. Oats, 1330–1
Hibiscus, 2660
Lactuca. Lettuce, 2330
Nicotiana. Tobacco, 2676
Oryza. Rice, 1710
Phaseolus, 2670
Saccharum. Sugar cane, 3237, 4493
Triticum. Wheat, 2721, 4054
Zea. Maize, 465
Stemphylium
Lupinus. Lupin, 3041, 3112
Trifolium. Red clover, 177
Stereum
Prunus. Plum, 1270
Sterility, fertility, 1440, 1444, 2507, 2563, 3561, 3642, 3794, 3829–31
Aegilops, 280, 4037
Agropyron, 3624
Arachis. Groundnut, 4670
Artemisia, 2049
Asimina. Papaw, 2160
Avena. Oats, 136, 349
Beta. Sugar beet, 778, 1944, 1951
Brassica. Brussels sprouts, 4782
Brassica. Cabbage, 2321, 4805
Brassica. Rape, 4563
Brassica. Sprouting broccoli, 2327
Brassica. Toria, 838
Sterility, fertility—*continued*.
Bromus, 1344
Cajanus, 2395
Capsicum, 3279–80
Caragana, 4734
Chrysanthemum, as insectide, 1294
Cichorium. Endive, 1260
Citrus. Mandarin, 2158
Cochliobolus, 167
Coffea. Coffee, 803
Corchorus. Jute, 1900, 3220
Crop plants, 1371
Cucurbita, 4826
Datura, 1270
Elaeis. Oil palm, 860
Elymus, 3074
Eriobotrya. Loquat, 4630
Festuca, 119
Gossypium. Cotton, 1865
Grasses, 568
Hibiscus, 122, 4481
Hordeum. Barley, 182, 349, 483, 492, 2972
Ipomoea. Sweet potato, 3912, 4423
Juglans. Walnut, 2162,
Lotus. Birdsfoot trefoil, 4360
Lycopersicon. Tomato, 4846
Malus. Apple, 2108
Medicago, 13, 4324
Nicotiana. Tobacco, 1989, 3253
Olea. Olive, 907, 2626
Oryza. Rice, 1698, 1709, 2467, 3003, 3872, 3902, 4257
Pachyrhizus, 623
Passiflora, 3377
Picea. Spruce, 4734
Pinus. Pine, 2291
Prunus. Almond, 2626
Prunus. Plum, 886, 2137
Pyrus. Pear, 2122, 3345
Raphanus. Radish, 2312, 3457–8, 4782
Secale. Rye, 175, 280, 3848, 4139
Solanum. Potato, 2607, 3131–2, 3142, 4392, 4396
Sorghum, 3933, 4232
Theobroma. Cacao, 805, 1365, 3274, 3946, 4546
Trifolium. Minor species, 1357
Trifolium. Red clover, 1730, 3617
Triticum. Wheat, 280, 4014, 4037
Vitis, 4698
Zea. Maize, 1630, 4186
Zea. Popcorn, 1054
Sterility, female
Brassica, 4800
Hordeum. Barley, 2973
Musa, for fibre, 1902
Trifolium. Red clover, 3634
Sterility, male, 3776
Aegilops, 2743, 4038
Allium. Onion, 2639, 3465, 4770, 4793–4
Beta. Sugar beet, 1259–60, 1952–3
Brassica. Brussels sprouts, 4770
Brassica. Sprouting broccoli, 3633
Capsicum, 4557
Corchorus. Jute, 3221
Cucumis. Cucumber, 3487
Festuca, 582
Gossypium. Cotton, 1856, 3918, 4438–9
Helianthus. Sunflower, 4573
Linum. Linseed, 3832
Lycopersicon. Tomato, 3495–6
Miscanthus, 1751
Musa. Banana, 2206
Musa, for fibre, 1902
Palms, 2175
Pennisetum, 506, 4228
Poa, 1322
Raphanus. Radish, 970

Sterility, male—*continued.*
Rubus. Raspberry, 4594
Saccharum. Sugar cane, 3227
Solanum. Potato, 3143
Sorghum, 2659, 2671
Trifolium. Red clover, 3634
Triticum. Wheat, 1520, 2743, 4038
Vegetable crops, 191
Vitis, 2238
Zea. Maize, 185, 190, 396, 404, 410, 413, 433, 453–6, 1259–60, 1632, 2919, 3962, 4187–8
Zea. Popcorn, 1055
Zea. Sweet corn, 2674
Sterility, self, 2527, 2593–4, 3643, 3678
Cichorium. Chicory, 1259
Crop plants, 189
Festuca, 1730
Lolium, 1730
Lotus. Birdsfoot trefoil, 3115, 3635
Medicago, 3086
Olea. Olive, 3374
Physalis, 2592
Picea. Spruce, 2250
Pinus. Pine, 2255
Prunus. Cherry, 3353
Prunus. Plum, 886
Pseudotsuga. Douglas fir, 2297, 3441
Ribes. Black currant, 4687
Ribes. Gooseberry, 4594
Ribes. Red currant, 4687
Secale. Rye, 375, 1604, 4138
Solanum. Potato, 4393
Strophanthus, 868
Theobroma. Cacao, 816, 2664
Trifolium. Alsike clover, 1305
Trifolium. White clover, 3096
Triticum. Wheat, 303
Stigma, *see* flower
Stipa
Hybridization, intergeneric, 1754
Stizolobium, see Mucuna
Stock, *see* grafting
Stomata
Bothriochloa, 3772
Dichanthium, 3772
Gossypium. Cotton, 726
Stone fruits
Breeding, 1299
Cold resistance, 1260
Grafting, 4589
Heat, drought, resistance, 117
Hybridization, interspecific, 4589
Storage quality, *see* quality of product
Straighthead
Oryza. Rice, 533
Strawberry, *see Fragaria*
Streptomyces
Albomycin, 4911
Light, effect of, 2405
Mutation, induced, 2405, 4911
Solanum. Potato, 629, 634, 640, 642–7, 656–8, 661, 666–7, 673, 692, 1297, 1823, 4400
Ultraviolet rays, 2405
Variation, 4912
X rays, 4911
Streptomycin, 182, 2487, 2493, 3358, 3718
Striga
Sorghum, 121–2, 3902, 3933
Strophanthus
Sterility, self, 868
Style, *see* flower
Stylosanthes
Chromosome number, 1757
Taxonomy, 620, 3116
Subterranean clover, *see Trifolium*
Sucrose
Triticum. Wheat, 1520
Sugar beet, *see Beta*
Sugar cane, *see Saccharum*
Sulphur
Vigna. Cowpea, 165
Sulphydryl compounds, 3765
Sunflower, *see Helianthus*
Sunn hemp, *see Crotalaria,* for fibre
Swede, *see Brassica*
Sweet clover, *see Melilotus*
Sweet corn, *see Zea*
Sweet flag, *see Acorus*
Sweet potato, *see Ipomoea*
Sweet sorghum, *see Sorghum*
Symbiosis
Trifolium. Red clover, 607–8
Synapsis, *see* meiosis
Synchytrium
Biotypes, 700–1, 1830, 3159, 4407
Solanum. Potato, 629, 699, 702, 1263, 1805, 2637, 3133, 3156–8, 3160, 4390, 4408
Syndesis, *see* meiosis
Systematics, *see* taxonomy

Tannin
Acacia, for tanning, 2045
Tannoids
Lespedeza, 3043
Taphrina
Prunus. Peach, 2082
Tapioca, *see Manihot*
Taraxacum, for rubber
Biotypes, 2064
Breeding, 870, 2628
Ultraviolet rays, 182
Taro, *see Colocasia*
Taxonomy, 43, 1080–1, 1221–3, 2537, 2564, 3566–8, 4938
Acer, 3422
Aegilops, 4117
Agropyron, 3616
Allium. Onion, 108
Alnus. Alder, 2280
Andropogon, 1749
Anthyllis. Kidney vetch, 614
Arachis. Groundnut, 3372, 4666, 4671
Archangelica, 2020
Artemisia, 3310
Astragalus, 1789
Astrebla, 563
Avena. Oats, 1589, 3598
Beta, 625, 1793
Betula. Birch, 2278
Bothriochloa, 4294
Brachyelytrum, 1753
Brassica. Cauliflower, 4810–1
Brassica. Turnip, 3122
Broussonetia, 1903
Brylkinia, 562
Capsicum, 3280
Carthamus. Safflower, 1302
Citrus, 99
Coffea. Coffee, 804
Colchicum, 3311–2
Crop plants, 2425, 3838
Cucurbita, 2670
Daucus. Carrot, 108
Deschampsia, 4299
Diarrhena, 562
Echinochloa, 3593
Elaeis. Oil palm, 3308
Elymus, 3074
Festuca, 1747
Fruit crops, 3316
Grasses, 561, 567, 1734–9, 3054, 3873, 4278

Taxonomy—*continued.*
Hordeum. Barley, 1675, 3596, 3599, 4222
Humulus. Hop, 3278
Linum. Flax, 1896
Linum. Linseed, 1896
Lycopersicon. Tomato, 1023–4
Malus. Apple, 2112, 3334
Mangifera. Mango, 3604
Manihot. Cassava, 140, 3248
Medicago, 601, 4325
Medicinal plants, 3589
Mentha, 3543, 3545–6
Musa. Banana, 133, 2206, 2653, 3388
Oryza. Rice, 528, 3595, 4260
Petroselinum. Parsley, 1056
Phyllorachis, 590
Pinus. Pine, 2287, 4766
Poa, 571
Prunus. Almond, 2170, 4662
Prunus. Peach, 4648
Prunus. Plum, 4636
Puccinia, 338
Pyrus. Pear, 2123
Quercus. Oak, 4742
Raphanus. Radish, 2313
Ribes, 4597
Ricinus. Castor oil plant, 100
Rubus, 915
Saccharomyces, 3557, 4925
Saccharum. Sugar cane, 3238
Salix. Willow, 3433
Secale. Rye, 3848
Sesamum. Sesame, 847
Solanum. Egg plant, 125
Solanum. Potato, 2607, 3150, 4417
Sorghum, 2660, 4295
Sporobolus, 3072
Stylosanthes, 620, 3116
Theobroma. Cacao, 4552
Trifolium. Red clover, 1354
Triticum. Wheat, 292, 315–6, 3597, 4064
Ulmus. Elm, 3429
Vegetable crops, 3578
Vigna. Cowpea, 3513
Vitis, 3403
Zea. Maize, 4179
Tea, *see Thea*
Teeth
Dactylis, 3861
Temperature, effect of, 55, 2513, 2583
Beta. Beetroot, 2306
Beta. Sugar beet, 2306
Cucumis. Cucumber, 2344, 3488
Grasses, 3052
Helminthosporium, 2398
Hordeum. Barley, 482, 499, 2974
Ipomoea. Sweet potato, 163
Lolium, 1355
Lycopersicon. Tomato, 1002, 3494
Mentha, 3544
Musa. Banana, 121
Nicotiana. Tobacco, 797, 1992–3, 4526
Oryza. Rice, 1708, 2997, 4248
Phleum, 4282–3
Pisum. Pea, 151–2
Poa, 540, 570, 1322, 1382
Poncirus, 3364
Prunus. Cherry, 2143
Prunus. Peach, 4651
Raphanus. Radish, 2312
Secale. Rye, 2899
Solanum. Potato, 4398
Sphacelotheca, 2991
Triticum. Wheat, 249, 279, 1514–5, 2779, 4105
Vegetable crops, 2306
Temperature, effect of—*continued.*
Viruses, 217, 1164
Vitis, 1232, 2244
Zea. Maize, 4181
Teosinte, *see Euchlaena*
Teratology, *see* development, abnormal
Testa, *see* seed
Tetranychus
Malus. Apple, 883
Thallium acetate
Allium. Onion, 3466
Thea. Tea
Breeding, 801, 3266, 3271, 4545
Cell division, 2578
Colchicine, 3268
Cold resistance, 2478, 3270–1, 4545
Hybridization, interspecific, 4541
Meiosis, 2478
Molybdenum, 3269
Nucleus, 3267
Oxalate, calcium, 4543–4
Phenols, 4541
Polyploidy, 2478, 3268, 4542
Potassium, 4544
Quality of product, 2003, 3271
Selection, artificial, 3935
Variation, 4543–4
Yield, 2004
Thecabius
Populus. Poplar, 2271
Themeda
Apomixis, 588
Theobroma. Cacao
Boron, 814
Breeding, 807–13, 819–20, 1300, 2011, 2672, 3945–6, 4546–7, 4549, 4551
Colletotrichum, 817
Fruit, 3275
Genetics, 3274, 3946
History and evolution, 4552
Hybridization, 2011
Inbreeding, 2011
Marasmius, 141, 817–20, 2011–2, 3946, 4546
Monilia, 817
Phytophthora, 806, 817
Pollination, 814–5, 3273, 4550
Quality of product, 4551
Statistics. Experimental designs, 1118
Sterility, fertility, 805, 1365, 3274, 3946, 4546
Sterility, self, 816, 2664
Taxonomy, 4552
Variety trials, 4548
Viruses, 805, 3273
Zinc, 815, 3275
Therioaphis
Medicago, 557, 603–5, 1769, 3032, 3093, 4330–1
Thiamin
Citrus. Lemon, 892
Oryza. Rice, 521, 4250–1
Vigna. Cowpea, 1037, 3514
Thielaviopsis
Nicotiana. Tobacco, 177, 1273, 2676, 4538
Thorns, *see* spines
Thrips
Gossypium. Cotton, 1887
Thyme, *see Thymus*
Thymine, 1166
Thymus. Thyme
Breeding, 2046
Quality of product, 3541
Tillage
Saccharum. Sugar cane, 769
Tillering
Hordeum. Barley, 2721
Saccharum. Sugar cane, 3242

Tilletia
Agropyron, 278
Biotypes, 2787
Heterothallism, 1551
Reproduction, 1552
Triticum. Wheat, 182, 256, 278, 329, 341, 1495, 1547–53, 2667, 2786–8, 4085
Timothy, *see Phleum*
Tobacco, *see Nicotiana*
Tomato, *see Lycopersicon*
Toria, *see Brassica*
Torulopsis
Development, 3558
Mutation, induced, 3558
X rays, 3558
Toxic soils
Crop plants, 1419
Festuca, 583
Gossypium. Cotton, 732, 1419, 3176
Malus. Apple, 4615–7
Medicago, 2667
Oryza. Rice, 2997
Persea. Avocado, 2180
Populus. Poplar, 956
Toxoptera
Avena. Oats, 367
Transduction and related phenomena, 11, 29–32, 1135–7, 1383, 1387, 2515, 2517–8, 2540–1, 2550, 3668–74, 3782, 3896, 3951
Transformation
Saccharomyces, 4916
Translocation, 1378, 2456, 3660
Aegilops, 184
Crop plants, 1312
Gossypium. Cotton, 724, 1865, 3200
Helianthus. Sunflower, 4572
Hordeum. Barley, 119, 182, 2495, 2963, 2970
Nicotiana. Tobacco, 793, 1999
Oryza. Rice, 2467
Pisum. Pea, 3526, 3528, 4894
Podocarpaceae, 4736
Secale. Rye, 1599, 3848
Triticum. Wheat, 184, 267, 277, 2481
Zea. Maize, 185, 383, 385, 2939–40, 4153, 4163
Transpiration, *see* water balance
Triethylene melamine, 3707
Vicia. Broad bean, 3769
Trifolium
Breeding, 606
Cold resistance, 606
Genetics, 3941
Growth period, 606
Hybridization, interspecific, 2676
Inflorescence, 3941
Polyploidy, 596
Rhizobium, 596
Variety trials, 154, 2645, 3080
Trifolium. Alsike clover
γ rays, 3957
Mutation, induced, 3957
Neutrons, 3957
Polyploidy, 1305
Sterility, self, 1305
Varieties, 3100
Trifolium. Crimson clover
Breeding, 3957
γ rays, 3957
Mutation, induced, 3957
Neutrons, 3957
Trifolium. Minor species
Colchicine, 1776
History and evolution, 3103
Hybridization, 3103
Introduction, plant, 1777
Trifolium. Minor species—*continued*.
Morphology, 3103
Polyploidy, 1776, 3102
Statistics. Biometry, 3101
Sterility, fertility, 1357
Variation, 3101
Trifolium. Red clover
Breeding, 177, 554, 2676, 3027, 3039, 3094, 3955, 4333
Cold resistance, 609, 1420, 3027
Colletotrichum, 177, 611
Ditylenchus, 1775, 3861, 4339
Ecotypes, 1729
Erysiphe, 175, 554, 3027
Genetics, 607–8, 3634
Heat, drought, resistance, 1730
Heterosis, 1730
Hybridization, 609, 3027
Kabatiella, 554, 2667, 3027
Meloidogyne, 1730
Mičurinism, 2632
Neutrons, 4337
Phosphorus, 4334
Pollination, 1730, 1774, 2632
Polyploidy, 119, 134, 548, 1420, 1726, 1730, 1772–3, 4336–7
Potassium, 4334
Quality of product, 4338
Rhizobium, 607–8
Sclerotinia, 1730, 3094, 4339
Seed production, 548
Stemphylium, 177
Sterility, female, 3634
Sterility, fertility, 1730, 3617
Sterility, male, 3634
Symbiosis, 607–8
Taxonomy, 1354
Variation, 4334
Varieties, 611, 1354, 2639, 2642–3, 4335–6
Variety trials, 115, 134, 1364, 4332
Vegetative reproduction, 4334
Yield, 609, 4334
Trifolium. Subterranean clover
Biotypes, 612
Genetics, 4345
Growth period, 4345
Mutation, induced, 4346
X rays, 4346
Trifolium. White clover
Biochemistry, 3049
Breeding, 1726, 3034, 3094, 3955, 3962
Clines, 4341
Competition, 4343
Cyanogenetic glucosides, 181
Development, abnormal, 4342
Genetics, 3096, 4341
Heat, drought, resistance, 4344
Hybridization, interspecific, 3096
Leaf, 1726, 3094, 4344
Linamarase, 4341
Linamarin, 4341
Lotoaustralin, 4341
Photoperiodism, 181
Polyploidy, 119, 3049, 3099, 4342, 4344
Seed production, 4343
Selection, artificial, 3097
Selection, natural, 181
Sterility, self, 3096
Variegation, 1726, 3094
Varieties, 182, 3094, 3098
Variety trials, 1364, 3095, 4340
Viruses, 3038
Trigonella, 3590
Trimethylethylene
Puccinia 2854

Triosephosphate dehydrogenase
Zea. Maize, 150
Tripsacum
Aneuploidy, 1624
Chromosome morphology, 4203
Chromosome number, 4203
Crossing over, 1624
Hybridization, intergeneric, 1624, 2934
Triticum. Wheat, 2426
Adaptation, 2748
Aelia, 2871
Aminoacids, 1553
Amitosis, 1525, 2764
Amphidiploidy, 279–82, 2746, 3624, 3989, 4044
Aneuploidy, 2473, 2481, 2763, 2869, 4053–4
Apomixis, 275, 4041
Asynapsis, 270
Biochemistry, 1459, 2772, 2855
Biotypes, 1511
Breeding, 110, 116, 121–2, 130, 175, 182, 229, 252, 255, 258, 260–1, 324, 327–9, 341, 1244, 1246, 1250, 1261, 1277, 1279, 1296, 1456, 1461–2, 1473–6, 1535, 2492, 2626, 2667, 2672, 2678, 2680, 2682, 2719, 2721–2, 2736, 2738–40, 2760, 2789–91, 2793, 2795–7, 2799–800, 2802, 2804, 2832, 2868, 3791–2, 3800, 3818, 3837, 3855, 3902, 3925, 3932, 3938, 3955, 3957–8, 3994, 3997–8, 4018, 4022, 4026–7, 4050, 4073, 4077, 4083, 4103
Caryopsis, 316, 1268, 1526, 2773, 4029
Catalase, 4056
Cell division, 3806
Cephalosporium, 1571
Cephus, 344, 2726, 2797
Centromere, 1482
Cercosporella, 323, 1259, 2783
Chlorate, potassium, 1575
Chromosome aberrations, 1480, 2765–6, 2873, 3892, 4014, 4032, 4052
Chromosome morphology, 293–4, 1523–4
Chromosome number, 271, 1484, 2748, 4032, 4034
Chromosome substitution, 3622
Cochliobolus, 343
Coffee spot, 2859
Colchicine, 279, 296, 4107, 4114
Cold resistance, 318, 1269, 1273, 1364, 1450, 1473, 1534–6, 1538, 3938, 4076–7
Colour, 1478, 2773, 3632, 3895, 4029
Competition, 4075
Cytology, 2668
2,4-D, 2873, 4113
2,4-DB, 218
DDT, 2854, 4106
Density of stand, 181, 1462
Dominance, 313, 1478, 1518, 2769, 4031
Dormancy, 1515–6
Embryo, 3844, 4084
Embryology, 3624
Endosperm, 1525, 2774, 3632
Enzymes, 322
Epidermis, 314
Epistasis, 313, 4028, 4103
Erysiphe, 175, 321, 1540, 1569, 2722, 2853, 3955, 3989, 4023
Eurygaster, 2871
Fertilization, sexual, 1519, 4062
Flower, 2784, 4064
Fungi, 320, 1260, 1539, 2678, 2789, 2794
Genetics, 263–5, 301, 308, 313, 321–2, 345, 1313, 1337, 1431, 1522, 1542–3, 1550, 1567–8, 1576, 2480, 2492, 2668, 2815–7, 2820–5, 2833, 3620, 3632, 3868, 3895, 3939, 4028–9, 4066, 4086, 4102–3
Genome analysis, 269, 276, 295, 1489, 2481, 2668, 4051
Germination, 237, 2767
Gibberella, 322, 1541–5, 2784
Glycolic acid oxidase, 4104
Triticum. Wheat—*continued.*
γ rays, 3892–3, 4055
Growth period, 299, 1414, 1481, 1509, 1512–4, 1574, 2626, 2768–70, 4006, 4056, 4058–60, 4079
Habit, 264, 1576, 2750, 4115
Hairs, 2773
Haploidy, 297
Heat, drought, resistance, 182–3, 341, 1315, 1536–7, 2780–1, 3996
Herbicides, 149, 2873, 4111
Heterosis, 198, 2741, 2771
History and evolution, 1508–10, 2761–2, 3623
Hybridization, 302, 314, 329, 1273, 1576, 2670, 2728
Hybridization, graft, 283, 1493, 2747, 3844, 4045, 4057
Hybridization, intergeneric, 110, 184, 269–78, 297, 1260, 1263, 1273, 1408, 1425, 1473, 1479, 1482–91, 1933, 1937, 2453, 2473, 2625, 2667–8, 2743–5, 2778, 2805, 2809–10, 2818–9, 2834, 3623, 3868–9, 3989, 4032–3, 4035–43, 4106, 4114
Hybridization, interspecific, 122, 268, 303–4, 1273, 1479–81, 1522, 1537, 1574, 2473, 2625, 2742, 2783, 2801, 3962, 3989, 4033–4
Hybridization, wide, 1539
Inflorescence, 304, 1521–4, 1937, 4065–6, 4072, 4086
Insects, 4108
Introduction, plant, 265, 315–6, 1532, 2677, 3852–3, 4074
Irrigation, 238
Leptosphaeria, 4023
Lethals, 266, 1576, 4030, 4053
Linkage, 267
Lodging, 232, 241, 319, 1464, 1473, 1495, 1538, 2637, 2782, 3818, 4078
Lysine, 4063
Matrocliny, 3615
MCPB, 218
Mealy endosperm, 4079
Meiosis, 272–3, 280, 297, 1485–6, 1488, 3806, 4036
Mičurinism, 58, 250, 284, 299, 1414, 1494–7, 1518, 2749–50, 2759, 4006, 4061
Multiple genes, 182, 337, 1441, 1542, 2773, 2869
Mutation, induced, 251, 1492, 2470, 2868, 2873, 3846, 3895, 4028
Neutrons, 2792, 2826, 3892
Niacin, 298
Nitrogen, 181, 1533
Nucleolus, 2763
Ophiobolus, 323, 1546
Oscinella, 1495
Perennial habit, 1490
Phosphorus, 318
Photoperiodism, 248–9, 1514, 1534, 2770, 2854, 3926
Physiology, 2853
Phytophaga, 1495, 4023, 4109
Pollen, 2874, 4038
Pollination, 58, 93, 300–2, 1349, 1517–8, 2771, 4031, 4061
Polyhaploidy, 274
Polyploidy, 279, 296, 1539, 2778, 3893, 4033, 4055
Protein, 2870
Puccinia, 121–2, 149, 175, 184, 277–8, 319, 326–41, 1259, 1273, 1279, 1296, 1364, 1466, 1473, 1487, 1502, 1538, 1555–70, 2627, 2648, 2654, 2667–8, 2671, 2677–8, 2680, 2682–3, 2720, 2738, 2790–2, 2795–857, 2862–70, 3792, 3902, 3956, 3962, 3989, 4023, 4034, 4086–107
Quality of product, 113, 182, 258, 262, 305–13, 320, 1246, 1269, 1313, 1364, 1451–2, 1455, 1495, 1527–31, 1535, 2631, 2637–8, 2667, 2723, 2725, 2740, 2747, 2775–9, 2798, 2858, 3808, 3817, 3962, 4008, 4044, 4059, 4067–73, 4077
Quantitative characters, 308, 1526, 3939
Radiation, 2868
Radioactive isotopes, 93, 251, 318, 3615
Respiration, 1569
Root, 237

Triticum. Wheat—*continued*.
Segmental exchange, 2667
Segregation, 1477, 4043
Selection, artificial, 198, 2751
Septoria, 175, 181, 342, 1259, 1441, 3956, 4023
Shedding, 232, 1337, 1516, 1538, 2671
Sowing, 317
Statistics. Experimental designs, 7, 224, 2598, 2718, 3612
Statistics. Genetics, 1522
Stem, 2721, 4054
Sterility, fertility, 280, 4014, 4037
Sterility, male, 1520, 2743, 4038
Sterility, self, 303
Sucrose, 1520
Taxonomy, 292, 315–6, 3597, 4064
Temperature, effect of, 249, 279, 1514–5, 2779, 4105
Tilletia, 182, 256, 278, 329, 341, 1495, 1547–53, 2667, 2786–8, 4085
Translocation, 184, 267, 277, 2481
Ultraviolet rays, 2766, 4107
Ustilago, 181, 324–5, 329, 341, 1259, 1431, 1495, 1502, 1554, 1570, 2628, 2667, 3956, 4081–4
Variegation, 3615
Varieties, 114, 119, 182, 207, 233, 285–92, 319–20, 324–5, 1294, 1367, 1470, 1498–507, 2629, 2637–8, 2671, 2720, 2752–60, 2864, 3602, 3799, 3854, 4001, 4019, 4046–50, 4077
Variety trials, 108, 230–1, 253–4, 256–9, 262, 319, 1448, 1468, 1470, 1491, 1572–3, 2613, 2627, 2631, 2645, 2663, 2735, 2737–8, 4015–7, 4020–1, 4023–5
Vernalization, 250, 1471–2, 1534, 1574–5, 4060, 4112
Viruses, 1364, 1425, 2667, 4023, 4110
X rays, 277, 1492, 2470, 2765–6, 2792, 2826, 3892–3, 3895, 4014, 4043, 4052, 4055
Yield, 248–9, 340, 1461, 3939
Yperite, 3846
Tritium, 1403
Tryptophane
Pulses, 4859
Tsuga
Geographical races, 954
Photoperiodism, 954
Tung, *see Aleurites*
Turnip, *see Brassica*
Twitch, *see Agropyron*

ULMUS. Elm
Breeding, 4750
Ceratocystis, 2705, 4752
Hybridization, interspecific, 4752
Mutation, induced, 2705
Neutrons, 2705
Taxonomy, 3429
X rays, 2705
Ultraviolet rays, 44–5, 86, 1169, 1381, 1395, 1447, 2452, 2557, 2678, 3638, 3641, 3649, 3698, 3700–1, 3709–11, 4926
Aspergillus, 2489, 2509
Botrytis, 215
Erysiphe, 215
Fusarium, 4462
Penicillium, 2489, 4914
Prunus. Peach, 1428, 4650
Puccinia, 4107
Rhodotorula, 2624
Saccharomyces, 1063
Streptomyces, 2405
Taraxacum, for rubber, 182
Triticum. Wheat, 2766, 4107
Uromyces, 215
Ustilago, 182
Zea. Maize, 1625, 2943
Uncinula
Vitis, 3902
Urethane
Hordeum. Barley, 182
Urocystis
Secale. Rye, 378
Uromyces
Biotypes, 610
Medicago, 1768, 3035, 3989
Phaseolus, 1033, 2367, 2370, 2682, 3962
Ultraviolet rays, 215
Vicia. Broad bean, 215
Ustilago
Avena. Oats, 366, 1593, 2667, 3956
Biotypes, 1432, 2783, 2785, 4012, 4224
Bromus, 580
Hordeum. Barley, 139, 497, 1677, 2668, 2678, 2960, 3861, 3956
Hybridization, interspecific, 4130
Lethals, 1434, 4130
Linkage, 1434
Saccharum. Sugar cane, 3915
Sodium arsenate, 182
Triticum. Wheat, 181, 324–5, 329, 341, 1259, 1431, 1495, 1502, 1554, 1570, 2628, 2667, 3956, 4081–4
Ultraviolet rays, 182
Zea. Maize, 182, 466, 1641, 4197

VACCINIUM
Breeding, 175, 2669
Varieties, 924
see also Oxycoccus
Valsa
Populus. Poplar, 2276
Vanilla
Fusarium, 2022
Hybridization, interspecific, 2022
Variation, 1075, 1140, 1447, 2506, 2544, 3549, 3679, 3682
Acer, 3246
Cajanus, 4904
Cereals, 196, 3787
Cochliobolus, 1679
Crop plants, 192, 2687–8, 3788, 3967
Glycine. Soya bean, 1339
Grasses, 1727, 3789
Helianthus. Sunflower, 3787
Hordeum. Barley, 196, 3886
Humulus. Hop, 3278
Malus. Apple, 3333
Medicago, 3046
Onobrychis. Sainfoin, 3787
Perilla, 3787
Phaseolus, 1034
Phleum, 3787
Pinus. Pine, 4764–5
Populus. Poplar, 2246
Prunus. Cherry, 3353
Pseudomonas, 3358
Secale. Rye, 1601
Streptomyces, 4912
Thea. Tea, 4543–4
Trifolium. Minor species, 3101
Trifolium. Red clover, 4334
Vitis, 2228
Variegation, 36
Nicotiana. Tobacco, 1990, 3254
Trifolium. White clover, 1726, 3094
Triticum. Wheat, 3615
Zea. Maize, 4152, 4192
Vegetable crops
Biochemistry, 2093
Bolting, 2306
Breeding, 1244, 2066, 2074, 2079, 2097, 2298, 2303–4, 2636, 3317
Cytoplasmic inheritance, 191
Genetics, 191
Growth period, 4781

Vegetable Crops—*continued.*
Heterosis, 997, 2304
Hybridization, 191
Introduction, plant, 3923
Photoperiodism, 2306
Quality of product, 969
Sterility, male, 191
Taxonomy, 3578
Temperature, effect of, 2306
Varieties, 968, 2093, 3318, 3605, 3799
Variety trials, 2671, 3798, 3802, 4772–4, 4777
X rays, 4781
Vegetative hybridization, *see* hybridization, graft
Vegetative period, *see* growth period
Vegetative reproduction, 63, 3750
Beta. Mangel, 4367
Brassica. Cabbage, 4806
Forest trees, 2259, 4737
Malus. Apple, 2110
Poa, 1742
Populus. Poplar, 955
Quercus. Oak, 3420
Trifolium. Red clover, 4334
Yucca, 1901
Velvet bean, *see Mucuna*
Venturia
Biochemistry, 197, 3337–8
Biotypes, 1244
Genetics, 878, 4623
Linkage, 4623
Malus. Apple, 182, 197, 1270, 2080, 2116–7, 2667, 2669, 3337–8, 4595
Mutation, induced, 197, 3337–8, 4624
Pyrus. Pear, 2116
Vernalization, 1218, 2434
Avena. Oats, 4013
Brassica. Cabbage, 982
Cereals, 234, 3787
Helianthus. Sunflower, 3787
Hordeum. Barley, 2502, 2980
Lolium, 1471
Oryza. Rice, 1723
Phleum, 1471, 3787
Pisum. Pea, 3531
Secale. Rye, 1472, 4013
Solanum. Potato, 1808
Triticum. Wheat, 250, 1471–2, 1534, 1574–5, 4060, 4112
Verticillium
Biotypes, 3960
Fragaria. Strawberry, 4695
Gossypium. Cotton, 121–2, 734–5, 1885–6, 3171, 3957
Humulus. Hop, 4590
Lycopersicon. Tomato, 2667, 2678, 3500
Medicago, 3091
Nicotiana. Tobacco, 1367
Solanum. Egg plant, 3446, 3504
Solanum. Potato, 636, 639, 643, 3161, 4379, 4409–10
Vetch, *see Vicia*
Vicia. Broad bean
Acetylethyleneimine, 3769
Amitosis, 2572
Argon, 2580–1
Botrytis, 215
Bruchus, 1030
Cell division, 77–8, 3757, 3762
Chromosome aberrations, 8, 1208, 1210, 2580–1, 2586, 3767, 3769, 4861–3
Colchicine, 1210, 3767
Crossing over, 3663
Cupferron, 4861
Cyanide, potassium, 4861–2
8-Ethoxycaffeine, 2581
Ethyleneimines, 8
Fertilization, sexual, 4863
Vicia. Broad bean—*continued*
Helium, 2580
Hybridization, graft, 2380
Hydrogen, 2580
Hydrogen sulphide, 4861
Krypton, 2580
Nitric oxide, 4861
Nitrogen, 2580
Nucleic acids, 78, 3744, 3823
Nucleus, 3744
Oxygen, 2580–1
Ozone, 2586
Pollination, 4863
Proflavine, 3769
Quality of product, 1270, 2073
Triethylene melamine, 3769
Uromyces, 215
Variety trials, 108, 4860
Xenon, 2580
X rays, 2580–1, 3767, 3823, 4861–2
Vicia. Vetch
Arsenite, sodium, 2585
Breeding, 2626, 2628, 3042
Chromosome aberrations, 2585
Chromosome breakage, 3771
p-Dichlorobenzene, 3771
Hybridization, interspecific, 3042
Introduction, plant, 1778
X rays, 3104
Vigna. Cowpea
Breeding, 2682
Fusarium, 168
Genetics, 168
Hybridization, 3232
Irrigation, 165
Phytophthora, 2682, 3516
Protein, 1037
Quality of product, 161, 1038, 3514–5
Sulphur, 165
Taxonomy, 3513
Thiamin, 1037, 3514
Varieties, 2373, 3513, 3962, 4873
Variety trials, 1364, 4872
Vine, *see Vitis*
Viruses, 2513, 3572, 4926
Agropyron, 1425, 2667
Arachis. Groundnut, 132, 3373
Avena. Oats, 1429, 3956
Beta, 1794
Beta. Sugar beet, 1260, 4518
Biotypes, 503, 894, 1028, 1437–8, 1445, 2000, 3264, 3501–2, 3511, 4420, 4519
Brassica, 4802
Brassica. Swede, 4371
Capsicum, 175, 3283
Carica. Papaya, 3378
Citrus. Orange, 2157
Cucumis. Cucumber, 217, 4832–3
Fragaria. Strawberry, 2202, 4590
Genetics, 1028
Gossypium. Cotton, 3177
Hibiscus, 121–2
Hordeum. Barley, 502, 1364, 2972
Lactuca. Lettuce, 4770
Linum. Flax, 3218
Lupinus. Lupin, 175, 3109
Lycopersicon. Tomato, 122, 2360, 3446, 4855
Manihot. Cassava, 785, 2664, 3931
Mutation, induced, 217, 1164
Nicotiana. Tobacco, 217, 800, 1164, 1273, 1998–2001, 3251, 3958, 4538–40
Oryza. Rice, 1436, 1720–1, 3017–8, 4270
Phaseolus, 1033, 1035, 1259–60, 2367, 3509–10, 3512, 4869
Pisum. Pea, 2391, 3530, 3958, 4897

Viruses—*continued.*
Prunus. Plum, 2142, 4590, 4637–8
Raphanus. Radish, 4786
Rubus. Raspberry, 4594
Saccharum. Sugar cane, 772, 1918, 3915
Secale. Rye, 1425
Solanum. Potato, 107–8, 634, 639, 643, 650, 653–4, 662, 694, 706–8, 1260, 1298, 1836–8, 2667, 3158, 3165, 3786, 3795, 4381, 4390–1, 4402, 4418–9
Spinacia. Spinach, 3478
Temperature, effect of, 217, 1164
Theobroma. Cacao, 805, 3273
Trifolium. White clover, 3038
Triticum. Wheat, 1364, 1425, 2667, 4023, 4110
X rays, 2000
Zea. Maize, 402, 404, 416, 424, 2671, 4196, 4202
Zea. Sweet corn, 1053
Vitamins
Fourcroya, 2710
Vitis, 936
Yucca, 2710
Vitis, 2628
Anatomy, 1232
Biochemistry, 940, 4721
Biotin, 936
Breeding, 174–5, 182, 938, 1299, 2213, 2224–7, 2669, 3390–1, 3400, 3407, 3902, 4696–7, 4705, 4719
Calcium, 2208, 2212, 2216–9
Cell division, 2242
Chromosome morphology, 4708
Colchicine, 3404
Cold, effect of, 1232
Cold resistance, 1298, 2239, 3399, 3409–10, 4718–20
Cytoplasmic inheritance, 930
Development, 2244
Embryology, 4698
Flower, 941
Fungi, 1232
Genetics, 181, 3405
Geographical races, 2128
Grafting, 939, 2208, 2212–9, 2222, 3401, 3406–7, 4720
Growth period, 938, 2076
Guignardia, 181
Heat, drought, resistance, 945, 2208, 2215–9
Hermaphroditism, 3405, 4705
Heterosis, 2223
History and evolution, 935, 3403, 4707
Hybridization, 940, 2208, 2221, 3399
Hybridization, interspecific, 181, 945–6, 3392–3, 3408, 4698
Inflorescence, 4717
Introduction, plant, 944
Lethals, 3393
Mutation, spontaneous, 2237, 4716
Niacin, 936
Nitrogen, 4710
Oidium, 2210
Osmosis, 4711
Otiorhynchus, 2241
Pantothenic acid, 936
Parthenocarpy, 2223
Pathology, 3408
Phosphorus, 2214, 4710
Photoperiodism, 2244
Phylloxera, 946, 2209, 2240, 2212, 2223, 2242, 4721
Plasmopara, 182, 3411, 3902
Pollen, 174
Polyploidy, 2223, 2236–8, 3404, 4716
Potassium, 4710
Pyridoxine, 936
Quality of product, 942–3, 2076, 2128, 3402, 4713–6
Quantitative characters, 4706
Root, 2240
Selection, artificial, 4699
Sex, 937, 4709–10
Vitis—continued.
Sodium, 2212, 2217, 2219
Sterility, fertility, 4698
Sterility, male, 2238
Taxonomy, 3403
Temperature, effect of, 1232, 2244
Uncinula, 3902
Variation, 2228
Varieties, 931–4, 943, 2221–2, 2229–35, 2243, 3394–402, 3410, 4700–6
Variety trials, 2211, 2220, 2243, 4718
Vitamins, 936
Waterlogging, 2219
Yield, 4717
Voandzeia
Quality of product, 1791

WALNUT, *see Juglans*
Water balance
Avena. Oats, 1585
Cereals, 236, 4011
Oryza. Rice, 520
Saccharum. Sugar cane, 3239
Zea. Maize, 1627
Water, effect of
Crop plants, 2717
Ipomoea. Sweet potato, 1844
Oryza. Rice, 4271
Water melon, *see Citrullus*
Waterlogging
Phaseolus, 3962
Vitis, 2219
Wheat, *see Triticum*
Wheat grass, *see Agropyron*
Wide hybridization, *see* hybridization, wide
Winter habit, *see* growth period
Winter hardiness, *see* cold resistance
White clover, *see Trifolium*
Willow, *see Salix*

XANTHOSOMA, 786
Xanthomonas
Biotypes, 2368, 3241
Brassica. Cabbage, 3473
Genetics, 2368
Gossypium. Cotton, 122, 1296, 1846–7, 1887, 2660, 3170–1, 3173, 3177, 3179, 4424, 4459–60
Lespedeza, 2678
Mutation, induced, 2667
Nicotiana. Tobacco, 175
Phaseolus, 2368
Polysaccharides, 2368
Saccharum. Sugar cane, 1924
Zea. Maize, 181
Xenia
Brassica. Indian mustard, 840
Brassica. Rape, 840
Brassica. Toria, 840
Diospyros. Persimmon, 3368
Lycopersicon. Tomato, 182
Zea. Sweet corn, 2397
Xenon
Vicia. Broad bean, 2580
X rays, 53, 60, 83, 148, 201–2, 1160, 1202, 1204, 1208, 2377, 1395, 2464, 2466, 2579, 2588, 2678, 3640, 3696, 3712, 3766, 3796, 4926
Agropyron, 4043
Allium. Chives, 3636
Allium. Onion, 79, 1203, 3636, 4791
Arachis. Groundnut, 195, 2465, 3971
Asparagus, 2706
Avena. Oats, 175, 1301, 2792, 2877
Capsicum, 3955
Cercospora, 1310
Citrullus. Water melon, 4823

X rays—*continued.*
Corchorus. Jute, 3220
Crop plants, 193, 204, 3810, 3917
Endoconidiophora, 181
Glycine. Soya bean, 1339, 2699
Gossypium. Cotton, 724, 3210, 3918
Grasses, 2704
Hordeum. Barley, 119, 481–2, 489–90, 1307, 1649, 1653–5, 1663–5, 1684, 2962, 2966, 2969–70, 2973, 3791, 3917
Humulus. Hop, 2014
Ipomoea. Sweet potato, 3912
Leguminous forage crops, 2704
Lupinus. Lupin, 175
Lycopersicon. Tomato, 1011, 1306, 2349–50, 2702, 3453
Malus. Apple, 2703, 3943
Manihot. Cassava, 3912
Medicago, 2704
Nicotiana. Tobacco, 790, 1987, 2677, 3255, 3894
Oryza. Rice, 2467, 2701, 4242–3
Paspalum, 3957
Phytophthora, 4650
Pisum. Pea, 3527–8, 3957, 4895
Poa, 119, 3055
Prunus. Peach, 1428
Ribes. Black currant, 922
Secale. Rye, 175, 2897
Sorghum, 2670
Streptomyces, 4911
Torulopsis, 3558
Trifolium. Subterranean clover, 4346
Triticum. Wheat, 277, 1492, 2470, 2765–6, 2792, 2826, 3892–3, 3895, 4014, 4043, 4052, 4055
Ulmus. Elm, 2705
Vegetable crops, 4781
Vicia. Broad bean, 2580–1, 3767, 3823, 4861–2
Vicia. Vetch, 3104
Viruses, 2000
Zea. Maize, 449, 1332, 1625–6, 3955, 4142
Xylem
Pinus. Pine, 4760
Zea. Maize, 1627

YAM, *see Dioscorea*
Yeast, *see Saccharomyces*
Yield
Avena. Oats, 2656
Beta. Sugar beet, 1977
Brassica. Rape, 840, 1260
Bromus, 3056
Carthamus. Safflower, 856, 3303
Cereals, 1461, 4009
Crop plants, 111, 206
Cucumis. Cucumber, 2300
Elaeis. Oil palm, 865, 2042–3
Glycine. Soya bean, 2378
Hordeum. Barley, 1676, 2960, 3997
Humulus. Hop, 822
Linum. Flax, 130
Medicago, 4324
Oryza. Rice, 529, 1713–4, 3000
Pinus. Pine, 1240
Solanum. Potato, 3151
Thea. Tea, 2004
Trifolium. Red clover, 609, 4334
Triticum. Wheat, 248–9, 340, 1461, 3939
Vitis, 4717
Zea. Maize, 447, 469, 2947–8, 4187–8
Yperite
Triticum. Wheat, 3846
Yucca
Hybridization, intergeneric, 1901
Seed production, 1901
Yucca—continued.
Vegetative reproduction, 1901
Vitamins, 2710

ZEA. Maize, 4944
Apomixis, 4172
Aminoacids, 456–7, 4189
Amylose, 433, 1613, 2942–3, 4154–5, 4164
Anatomy, 1634
Anthocyanins, 2911
Aneuploidy, 146, 1624
Biochemistry, 1646, 4169
Breeding, 116, 122, 129, 133, 185, 381, 395, 397–400, 402–4, 406–13, 424, 426, 452–3, 463, 1294, 1296, 1299, 1323, 1611–3, 2497, 2666, 2672, 2676, 2904, 2906, 2909, 2953, 3930, 3935, 3945, 3957, 3960, 3962, 4143–5, 4148–9, 4163, 4189
Busseola, 4201
Calandra, 3930
Caryopsis, 155, 445–6, 4151–2, 4192, 4195
Cellulose, 465
Centres of origin, 4180
Chilo, 470
Chromosome aberrations, 1345, 1380, 1625–6, 2469, 2938, 3954
Chromosome biochemistry, 3749
Chromosome morphology, 2486, 3600
Cirphis, 1364
Climate, 2941
Cochliobolus, 167, 469, 2956
Colchicine, 451
Cold resistance, 463, 1259–60
Colour, 185, 445–6, 1614, 2936, 3947, 3954, 4150–1, 4191
Competition, 4141
Complex loci, 445–6
Crossing over, 385, 1624, 3954
Cytoplasm, 4187
Cytoplasmic inheritance, 185, 190, 455–6, 1632, 2936, 4151, 4188
Density of stand, 1637, 2948
Development, 2485, 2900
Diatraea, 1364, 3962
Diplodia, 415, 423, 465–6, 1347, 1364, 1643, 3962
Dominance, 2504
Empoasca, 1364
Endomitosis, 2937
Endosperm, 442, 448, 1345, 1372, 1380, 2943–4, 4154–5, 4191
Ensilage, 1636, 4194
Epistasis, 384, 2912–3
Flower, 1634
Fungi, 395, 415, 417, 2667, 2670, 2950
γ rays, 1345, 1375, 3972
Genes, nature and physiology, 4150–1, 4173
Genetics, 17, 146, 155, 181–2, 185, 190, 383, 433, 441, 458, 460, 1343, 1370, 1372, 1614–5, 1627, 1632, 1634, 1643, 2490, 2623, 2911, 2940, 2942–4, 2951, 2954, 3940, 3954, 4150–5, 4163–4, 4173, 4188, 4192, 4195, 4201
Gibberella, 423, 465–6, 1364, 1639, 3962
Gibberellins, 2485
Growth period, 185, 232, 433, 452, 464, 1628, 1638, 2725, 3818, 3940, 4166, 4185
Habit, 433, 447, 1623, 4167
Haploidy, 451, 4182–3
Heat, drought, resistance, 122, 185, 440, 464, 2682, 2949, 3955
Heliothis, 1364, 4200
Helminthosporium, 122, 131, 181, 397–8, 404, 407, 410, 414, 424, 466, 468–9, 1296, 1323, 2490, 2956, 3935, 3962, 4163
Heterosis, 26, 150, 386, 441, 1364, 2486, 2504, 2913, 4153, 4171–2
Homozygosis, 441, 451, 1614, 1631, 4151
History and evolution, 2427, 4179

Zea. Maize—*continued.*
Hybridization, 110, 177, 181, 386–94, 425, 432–40, 454, 461, 469, 1244, 1259–61, 1263, 1282, 1294, 1296, 1321, 1324, 1364–5, 1616–23, 1631, 1633, 1638, 2626, 2628, 2667, 2670–1, 2674, 2676, 2907, 2914–33, 2935, 2945, 2949–50, 3818, 3902, 3909, 3931–3, 3955, 3957–8, 3995, 4142, 4158–62, 4165–70, 4190, 4199
Hybridization, graft, 2648
Hybridization, intergeneric, 442, 1624, 2475, 2934
Hybridization, wide, 1334
Inbreeding, 140, 156, 443–4, 2935
Inflorescence, 1635, 2623, 2648, 4166
Irrigation, 439
Introduction, plant, 422, 433, 1648, 2946
Inversion, 4153
Linkage, 385, 4153, 4156–7
Lodging, 185, 465, 1259, 1638, 4167
Maleic hydrazide, 1626, 2938
Meiosis, 2475
Mičurinism, 58, 1629, 1635, 4171, 4181
Multiple genes, 433, 1630
Mutation, 146, 445–8, 2485, 3947, 3954
Mutation, back, 2547
Mutation, induced, 449, 1332, 1345, 1375, 1625, 2943, 3972
Mutation, spontaneous, 442, 1388, 1394, 1627
Nitrogen, 465
Nucleolus, 2938
Nutrients, 438
Oscinella, 1644
Oxygen, 449
Penicillium, 4195
Phosphorus, 462
Photoperiodism, 1454
Physoderma, 2951, 3957
Polyembryony, 3955
Pollen, 456, 4186, 4190
Pollination, 58, 1629
Polyploidy, 4182
Protein, 458–9, 4189
Puccinia, 129, 131, 133, 399, 408, 414, 424, 467, 1294–5, 1343, 1642, 2666, 2953–5, 3931–2, 3935, 3958
Pyrausta, 1272, 1645–6, 4169, 4198–9
Pythium, 4195
Quality of product, 2900, 2909, 2945, 4199
Quantitative characters, 458, 1615, 2940, 4153
Radioactive isotopes, 4186
Reproduction, 2941
Root, 2937
Seed production, 418–20
Segregation, 442
Selection, artificial, 405, 433, 2670, 2947, 4174
Serology, 2486
Sesamia, 396, 4201
Sex, 4184
Sorosporium, 1640
Sowing, 438, 4193
Starch, 448, 460, 2944
Statistics. Biometry, 421, 2947
Statistics. Experimental designs, 437, 1610, 1637, 4141
Zea. Maize—*continued.*
Statistics. Genetics, 17, 1609, 1622, 4157
Stem, 465
Sterility, fertility, 1630, 4186
Sterility, male, 185, 190, 396, 404, 410, 413, 433, 453–6, 1259–60, 1632, 2919, 3962, 4187–8
Sugars, 461, 1633
Taxonomy, 4179
Temperature, effect of, 4181
Translocation, 185, 383, 385, 2939–40, 4163
Triosephosphate dehydrogenase, 150
Ultraviolet rays, 1625, 2943
Ustilago, 182, 466, 1641, 4197
Variegation, 4152, 4192
Varieties, 450, 1300, 2638, 3961, 4002, 4176–9
Variety trials, 121, 380, 382, 396, 401, 427–31, 433, 439, 1298, 1637, 1647–8, 2615–6, 2661–2, 2901–3, 2910, 4146–7, 4149, 4194
Viruses, 402, 404, 416, 424, 2671, 4196, 4202
Water balance, 1627
Xanthomonas, 181
X rays, 449, 1332, 1625–6, 3955, 4142
Xylem, 1627
Yield, 447, 469, 2947–8, 4187–8
Zea. Popcorn
Cytoplasmic inheritance, 1055
Genetics, 1054–5
Hybridization, 2399, 3539
Modifiers, 1055
Quality of product, 3540
Selection, artificial, 3540
Sterility, fertility, 1054
Sterility, male, 1055
Zea. Sweet corn
Bacterium, 4905
Breeding, 175, 181, 2302, 3957, 4906
Caryopsis, 2397
DDT, 4907
Growth period, 2396
Heliothis, 4906
Helminthosporium, 175, 2398
Hybridization, 2674, 3537, 3958
Pyrausta, 2677
Pythium, 3538
Quality of product, 2301–2
Sterility, male, 2674
Varieties, 1298, 2396, 3453
Viruses, 1053
Xenia, 2397
Zizania
Meiosis, 2472
History and evolution, 2472
Hybridization, interspecific, 2472
Zinc
Festuca, 583
Theobroma. Cacao, 815, 3275
Zornia
Chromosome number, 1757
Zoysia
Hybridization, 4292
Varieties, 3063

ERRATA TO "PLANT BREEDING ABSTRACTS"

Vol. XXV, Abst. 2509, line 2, *for* to *read* from.
Vol. XXVII, p. 399, author to review at foot of column 1 should be Seitzer, J.
Vol. XXVIII, Abst. 516, *for* Johnson *read* Johnston.
Abst. 734, *for* Manolov, J. *read* Manolov, I.
Abst. 951, *for* Nilson *read* Nilsson.
Abst. 1228, journal abbreviation, *for* 1947 *read* 1957.
Abst. 1891, *for* Senčenko, S. I. *read* Senčenko, G. I.
Abst. 2556, *for* Amenhof *read* Zamenhof.
Absts. 2655–6, *for* Rajogopalan *read* Rajagopalan.

Abst. 2703, *for* 2285, *read* 3385.
Abst. 2763, line 4, *for* XVII *read* XVIII.
Abst. 3108, *for* Atabekova, A. J. *read* Atabekova, A. I.
Abst. 3136, author should be Vogt, W.
Abst. 3490, *for* Alpat'ev, A. A. *read* Alpat'ev, A. V.
Abst. 3576, line 1, *for* 2 Sept. *read* 2 Aug.
Abst. 4000, *for* Bordovskaja *read* Borkovskaja.
Abst. 4090, *for* Bocsa *read* Bócsa.
Abst. 4277, *for* Emery, H. P. *read* Emery, W. H. P.
Abst. 4482, *for* Nevinnyh, V. I. *read* Nevinnyh, V. A.

THE COMMONWEALTH BUREAU OF PLANT BREEDING AND GENETICS

School of Agriculture, Cambridge, England.

Consultant Director:

PROF. SIR JOSEPH B. HUTCHINSON, C.M.G., Sc.D., F.R.S., Drapers' Professor of Agriculture.

Director: P. S. HUDSON, O.B.E., Ph.D.

Assistant Director: R. H. RICHENS, M.A.

Assistants: Mrs. S. M. ARY, M.A.
Miss T. ASHTON, M.A.
Miss M. E. HALLAM, B.A.
B. E. HEISELER.
Miss O. HOLBEK, B.Sc.
Mrs. M. E. STARK, B.A.

Publications:

PLANT BREEDING ABSTRACTS

Issued quarterly. Subscription 70/-, with Subject Index. (Subscriptions for current volumes sent direct from within the British Commonwealth of Nations are subject to a reduction of 20%.) Single copies 20/- each.

Copies of "Plant Breeding Abstracts" printed on one side of the paper can be supplied, for the convenience of readers wishing to cut up and file the references, at an additional cost of 15/- per volume.

Important Note.—Every effort is made to make Plant Breeding Abstracts as complete as possible and its notices of papers referring to plant breeding or the genetics of crop plants as prompt as possible. To aid in this, authors are invited to send to the Director copies of their papers immediately on publication.

Other Publications:

	s.	d.
JOINT PUBLICATIONS		
No. 3. The Breeding of Herbage Plants in Scandinavia and Finland	4	0
No. 5. The Production of Seed of Root Crops and Vegetables	5	0
No. 8. Forest Tree Breeding and Genetics, by R. H. Richens	5	0
TECHNICAL COMMUNICATIONS		
4. An Outline of Cytological Technique for Plant Breeders	2	6
6. The Action and Use of Colchicine in the Production of Polyploid Plants, by J. L. Fyfe	1	6
9. Potato Collecting Expeditions in Mexico and South America. II. Systematic Classification of the Collections, by J. G. Hawkes	7	6
10. Photoperiodism in the Potato, by C. M. Driver and J. G. Hawkes	2	6
11. Cultivation and Breeding of Russian Rubber-bearing Plants	2	6
12. The New Genetics in the Soviet Union, by P. S. Hudson and R. H. Richens	6	0
13. The Use of Heterosis in the Production of Agricultural and Horticultural Crops, by Miss T. Ashton	3	0
14. Technique of Breeding for Drought Resistance in Crops, by Miss T. Ashton	2	6
TECHNICAL COMMUNICATIONS—*continued.*		
15. Field Trials II: The Analysis of Covariance, by J. Wishart	3	6
16. The Theory and Practice of the Back-cross Method in the breeding of Non-cereal Crops, by Mrs. M. Thomas	15	0
17. Abstract Bibliography of Cotton Breeding and Genetics, 1900–1950, by R. L. Knight	21	0
18. Principles and Practice of Field Experimentation, by J. Wishart and H. G. Sanders. 2nd Edition	21	0
New and Promising Varieties recently described in the Literature		
Issue No. 6	1	0
Issue No. 7	2	6
Issue No. 8	6	0
INDEXES		
Subject Index to Vols I to V of Plant Breeding Abstracts	20	0
Subject Index to Vols VI to VIII of Plant Breeding Abstracts	20	0
Subject Index to Vols IX-XXVI of Plant Breeding Abstracts .. .. each	20	0
BIBLIOGRAPHICAL MONOGRAPHS		
Bibliography on insect pest resistance in plants. (1944)	1	6
Bibliography of Baking Quality Tests. Supplement	1	6

Subscriptions to any of the above Publications should be sent to Commonwealth Agricultural Bureaux, Central Sales Branch, Farnham House, Farnham Royal, Nr. Slough, Bucks, England.

Loss in Transit.—Claims for numbers of Plant Breeding Abstracts lost in transit will only be considered if notice of such loss is received within three months of the date of posting.

JOURNALS PREPARED BY BUREAUX ON RELATED SUBJECTS

	Prepared by the
Herbage Abstracts (50/-)	Commonwealth Bureau of Pastures and Field Crops, Hurley.
Field Crop Abstracts (50/-)	Commonwealth Bureau of Pastures and Field Crops, Hurley.
Horticultural Abstracts (70/-)	Commonwealth Bureau of Horticulture and Plantation Crops, East Malling.
Soils and Fertilizers (60/-)	Commonwealth Bureau of Soils, Harpenden.
Forestry Abstracts (70/-)	Commonwealth Forestry Bureau, Oxford.

The annual subscription to the above journals is indicated in brackets; a special reduction of 20% is given for orders for current volumes received direct from subscribers in Great Britain, the Dominions and Colonies.

RECENT AND FORTHCOMING OCCASIONAL PUBLICATIONS ON AGRICULTURE AND FORESTRY

TECHNICAL COMMUNICATIONS, ETC.

Commonwealth Bureau of Pastures and Field Crops, Hurley.

41. Management and Conservation of Vegetation in Africa. 1951 .. .. 10s. 6d.
42. Methods of surveying and measuring vegetation. By Miss D. Brown .. 35s. 0d.
43. The storage of seeds for maintenance of viability. By Dr. E. B. Owen. 1956 .. .. 20s. 0d.
44. The underground organs of herbage grasses. By A. Troughton. 1957 25s. 0d.

Commonwealth Bureau of Horticulture and Plantation Crops, East Malling.

22. Sand and water culture methods used in the study of plant nutrition. By E. J. Hewitt. 1952 .. .. 42s. 0d.
23. Field experimentation with fruit trees and other perennial plants. By S. C. Pearce. 1953 .. .. 10s. 0d.
24. The mulching of vegetables. By Patricia Rowe-Dutton. 1957 .. .. 20s. 0d.

Commonwealth Bureau of Soils.

47. Laterite and lateritic soils. By J. A. Prescott and R. L. Pendleton. 1952 6s. 0d.
48. The trace-element content of soils. By D. J. Swaine. 1955 .. .. 25s. 0d.
49. Mulching. By G. V. Jacks, W. D. Brind and R. Smith. 1955 .. .. 15s. 0d.

The above publications are obtainable from Commonwealth Agricultural Bureaux, Central Sales Branch, Farnham House, Farnham Royal, Nr. Slough, Bucks, England.

Commonwealth Mycological Institute, Kew, Surrey.

An introduction to the taxonomy and nomenclature of fungi. By G. R. Bisby. 1953 .. .. 10s. 0d.

Tobacco diseases, with special reference to Africa. By J. C. F. Hopkins 1956 .. .. 35s. 0d.

Common names of virus diseases used in the Review of Applied Mycology (1957) .. .. 6s. 0d.

PRINTED BY W. HEFFER & SONS LTD., CAMBRIDGE, ENGLAND